



ALPHA

Maintenance Manual

Serial #0001 to 2139

 **labrie** | DRIVE EXCELLENCE™

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labrie**plus**

Thank you for your purchase of a new Labrie™, Leach™ or Wittke™ product. To ensure maximum reliability, insist on genuine **labrieplus** replacement parts. LabriePlus replacement parts are designed and manufactured to exacting standards. The use of counterfeit, will-fit or substitute parts may effect the operation and performance of the unit.

Visit our Website at usa.labrieplus.com or canada.labrieplus.com, or contact us at 1-800-231-2771 (in the U.S.) or 1-877-452-2743 (in Canada), twenty-four hours a day, seven days a week. We are available to help you with any questions or concerns.



WARRANTY



Refuse bodies manufactured by Leach Company, ("Company") are supplied and sold under a Limited Warranty that they are and will remain free of defects in workmanship or material for a period of six (6) months from date of original sale under reasonable conditions of use and operation, providing required preventative maintenance services are performed. An additional six (6) month warranty is also available for purchase. If a failure occurs during said period because of such defect in the opinion of the Company, the component or part shall be repaired or replaced by an authorized Leach Distributor at no cost to the customer provided the unit is brought to the distributor's service facility. After 3 months, performance of adjustments or the replacement of wear/expendable components is not covered under warranty. This limited warranty is the sole and exclusive warranty of the Leach Company.

THE COMPANY MAKES NO WARRANTY AS TO MERCHANTABILITY, FITNESS FOR USE, LEGALITY OF OPERATION IN ANY JURISDICTION OR ANY IMPLIED WARRANTY OF ANY KIND OR NATURE. THE COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND OR NATURE, OTHER THAN ITS LIMITED WARRANTY OF REPLACEMENT HEREIN. NO OTHER PERSON, FIRM OR CORPORATION CAN BIND THE COMPANY TO ANY WARRANTY OTHER THAN HEREIN ABOVE STATED.

To validate the new unit warranty, an authorized Leach distributor must have completed a pre-delivery inspection before the unit is placed into service, and the delivery report form signed by both the customer and distributor must be submitted to the Leach Service Department.

Because Company products are engineered to work only with genuine Company parts, this limited warranty will be void and of no effect if: (a) Company products are modified other than as done at its factory or as authorized to be done by the factory in writing; or (b) Parts or assemblies of any other manufacturer are used as substitutes for genuine Company parts.

Genuine Leach replacement parts, components and assemblies are also sold under a Limited Warranty to be free from defects in workmanship or material for a period of six (6) months. This a replacement only warranty and the item must be returned to the Leach distributor for exchange. The labor to replace or repair the part shall be the responsibility of the customer. There is no warranty on expendable items, wear components or used parts.

Leach Company reserves the right to redesign and/or discontinue the manufacture of parts, components and assemblies at any time.

FOREWORD

For over 100 years the Leach Company has been a leader. The tradition continues with the Alpha, a quality built product of the most advanced design in refuse carrying bodies. We at Leach are proud of the quality engineering, material, and workmanship that goes into each unit which is backed up by the best parts, service, and distributor support in the industry.

An area of great importance to us at Leach Company is your safety. Please read carefully the SAFETY PRECAUTIONS in Section 2. They are important.

This manual was prepared with the intention of providing clear, concise, easy-to-use operating and service instructions. We ask that if you have any comments or suggestions about this manual, please contact us. We are here to be of service to you, our valued customers.

Best regards,

Danny J. Schloss, C.S.E.
Director of Service






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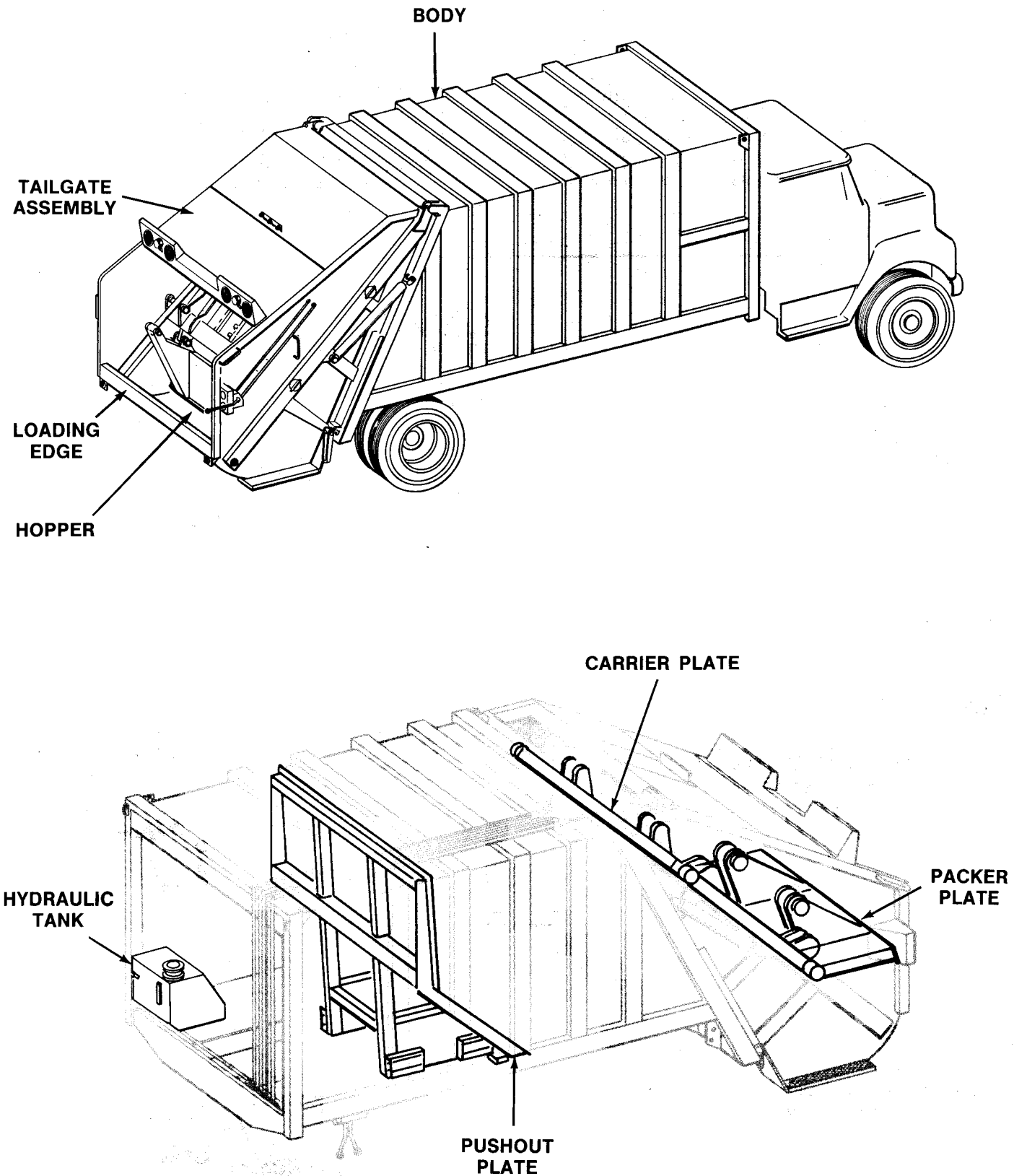
CAPSCREW MARKING AND TORQUE VALUES

Usage	Much Used	Used at Times	Used at Times
Capscrew Diameter & Minimum Tensile Strength PSI	To 3/4 - 120,000 To 1 - 115,000	To 5/8 - 140,000 To 3/4 - 133,000	150,000
Quality of Material	Min. Commercial	Med. Commercial	Best Commercial
SAE Grade Number	5	6 or 7	8
CAPSCREW HEAD MARKINGS Manufacturers marks may vary. These are all SAE Grade 5 (3-line.)     			
Capscrew Body Size (Inches) - (Thread)	Torque Ft-Lb (kg m)	Torque Ft-Lb (kg m)	Torque Ft-Lb (kg m)
1/4 - 20	8 (1.11)	10 (1.38)	12 (1.66)
- 28	10 (1.38)		14 (1.94)
5/16 - 18	17 (2.35)	19 (2.63)	24 (3.32)
- 24	19 (2.63)		27 (3.73)
3/8 - 16	31 (4.29)	34 (4.70)	44 (6.09)
- 24	35 (4.84)		49 (6.78)
7/16 - 14	49 (6.78)	55 (7.61)	70 (9.68)
- 20	55 (7.61)		78 (10.79)
1/2 - 13	75 (10.37)	85 (11.76)	105 (14.52)
- 20	85 (11.76)		120 (16.60)
9/16 - 12	110 (15.21)	120 (16.60)	155 (21.44)
- 18	120 (16.60)		170 (23.51)
5/8 - 11	150 (20.75)	167 (23.10)	210 (29.04)
- 18	170 (23.51)		240 (33.19)
3/4 - 10	270 (37.34)	280 (38.72)	375 (51.86)
- 16	295 (40.80)		420 (58.09)
7/8 - 9	395 (54.63)	440 (60.85)	605 (83.67)
- 14	435 (60.16)		675 (93.35)
1 - 8	590 (81.60)	660 (91.28)	910 (125.85)
- 14	660 (91.28)		990 (136.92)

NOTES:

1. Always use the torque values listed above when specific torque values are not available.
2. The above is based on use of clean, dry threads.
3. Reduce torque by 10% when engine oil is used as a lubricant.
4. Reduce torque by 20% if new plated capscrews are used.
5. General Formula for calculating Torques is as follows: Torque in Inch Lbs. = .2 x Nominal Diameter of Screw x Loads in Lbs., where Load = 80% of Yield Strength, expressed in Lbs., not pounds per square inch.

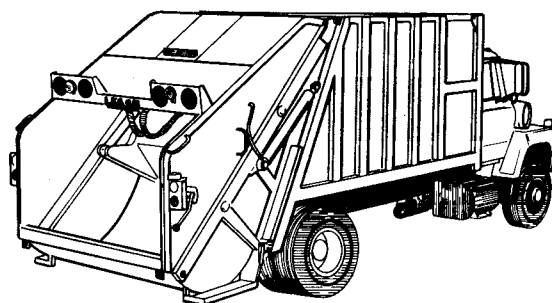
TERMS YOU WILL NEED TO KNOW



INTRODUCTION

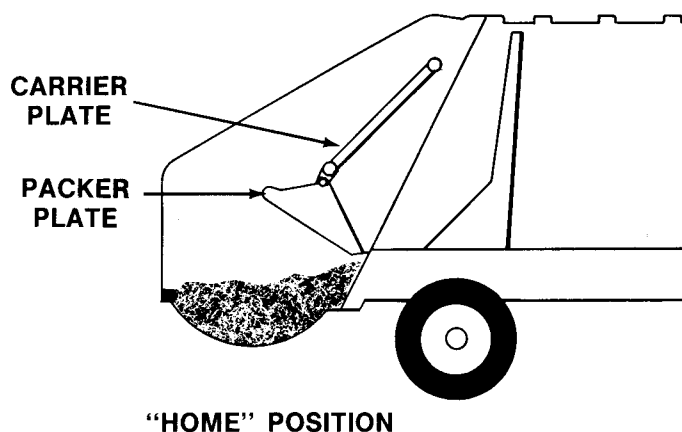
INTRODUCTION

The main purpose of the packer is to safely and efficiently: load; compact; (transport); and unload refuse. The following describes how the unit performs those tasks in the most basic terms. For a more detailed description of the unit and its components, read the complete Alpha SERVICE MANUAL. Before going further, look at the accompanying full page illustration of the Alpha and become familiar with the terms you will need to know.



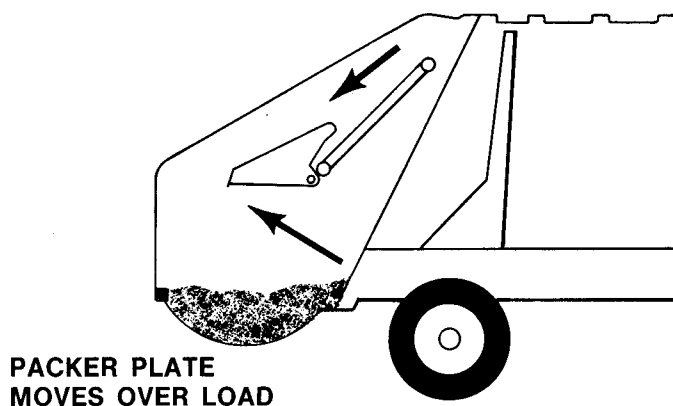
LOADING

Refuse is first loaded into the hopper of the tailgate assembly. The carrier and packer plates which sweep up and pack the refuse from the hopper, will be in the "home position."

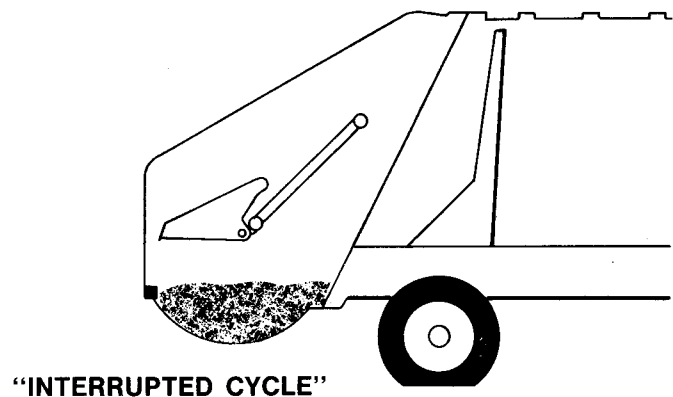


COMPACTION

When the operator starts the packing cycle the packer plate opens and the carrier and packer plates automatically move rearward, over the load.

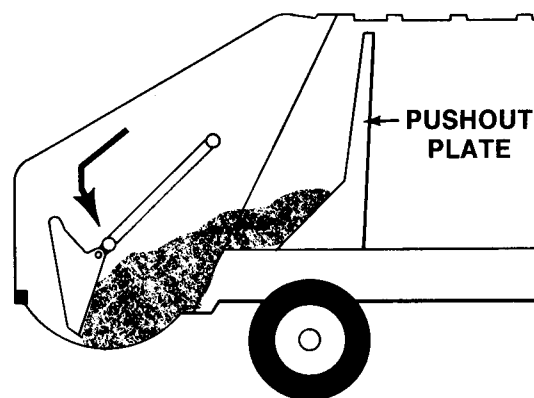


Next, the carrier and packer plates automatically stop at the "interrupted cycle" position.



INTRODUCTION

The operator again activates the packing cycle. The carrier and packer plates move forward and sweep the refuse from the hopper up into the body and pack it against the pushout plate. Having completed a cycle, the carrier and packer plates are back into the "home" position and the hopper is cleared for more refuse.

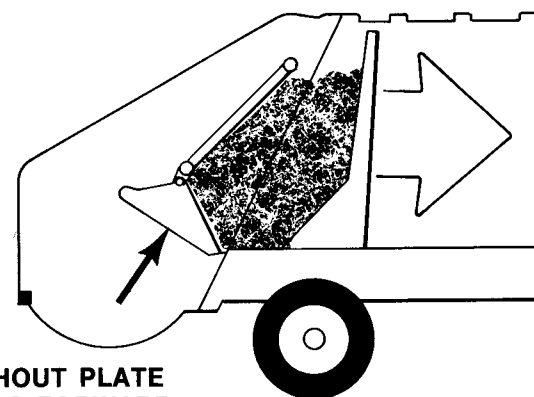


COMPACTION CYCLE

Also, during the compaction cycle, considerable hydraulic pressure is applied to the cylinders which control movement of the carrier and packer plates. This causes the refuse to be compacted tightly allowing for a large carrying capacity.

On units with the standard clamp pushout system, the operator must manually release the pushout plate clamping system to allow movement of the pushout plate.

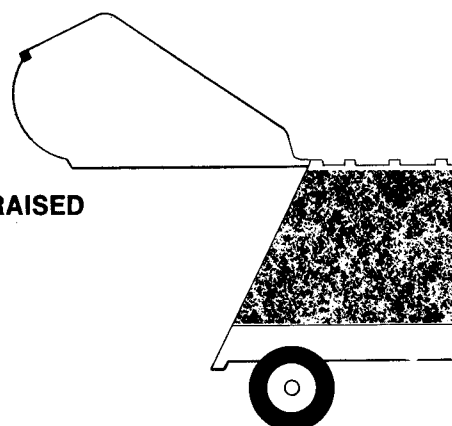
Once the body is full the Alpha can be moved to the dumpsite for unloading.

PUSHOUT PLATE
MOVES FORWARD

UNLOADING

At the dumpsite the unit is unloaded in two easy steps:

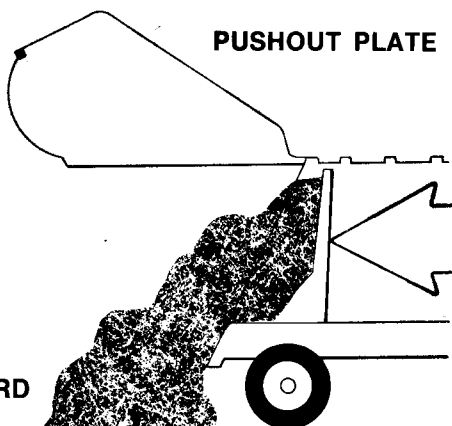
First, the tailgate is raised by the operator.



TAILGATE RAISED

Second, the pushout plate is moved to the rear of the body, pushing out the load.

The pushout cylinder is retracted and then the clamp set by extending the cylinder a couple of inches. At this time the pushout plate is again in position for loading. The tailgate is lowered and "latched" to the body.

PUSHOUT PLATE
MOVES REARWARD
EJECTING LOAD

SAFETY PRECAUTIONS

GENERAL

The Alpha has been designed with the operator in mind. However, as with any industrial machinery, especially those that are large and apply forces through hydraulic pressures, the ultimate responsibility for safety rests with you — the user. An alert, conscientious attitude and observance of all known safe operating practices are the best ways to prevent accidents.

Before operating the unit it is the operator's responsibility to be thoroughly familiar with the instructions contained in the Operator's Manual.

Publication of these precautions does not imply or in any way represent an all inclusive list. It is the operator's responsibility to be familiar with and ensure that operation is in accordance with safety requirements and codes including all applicable Occupational Safety & Health Act (OSHA) and American National Standards Institute (ANSI) regulations.

DANGER, WARNING, AND CAUTION DECALS

See the accompanying illustration for the location and label content of all safety decals.

1. These decals must be obeyed at all times.
2. These decals must be in place at all times. Report any damaged or missing decals to the proper authority at once.
3. Replacement decals can be ordered free of charge from your local authorized LEACH distributor.



DANGER, WARNING, CAUTION and **NOTE** notations appear throughout this manual.

- * The word **DANGER** precedes information pertaining to specific immediate hazards which if disregarded, **WILL** result in **SEVERE PERSONAL** injury or death of the user or others.
- * The word **WARNING** precedes information pertaining to hazards or unsafe practices which **COULD** result in personal injury or death.

- * The word **CAUTION** precedes information pertaining to potential hazards or unsafe practices which if disregarded, may result in minor personal injury or damage to the equipment.
- * The word **NOTE** precedes information which is vital to the proper operation or maintenance of the equipment.

PRIOR TO START UP

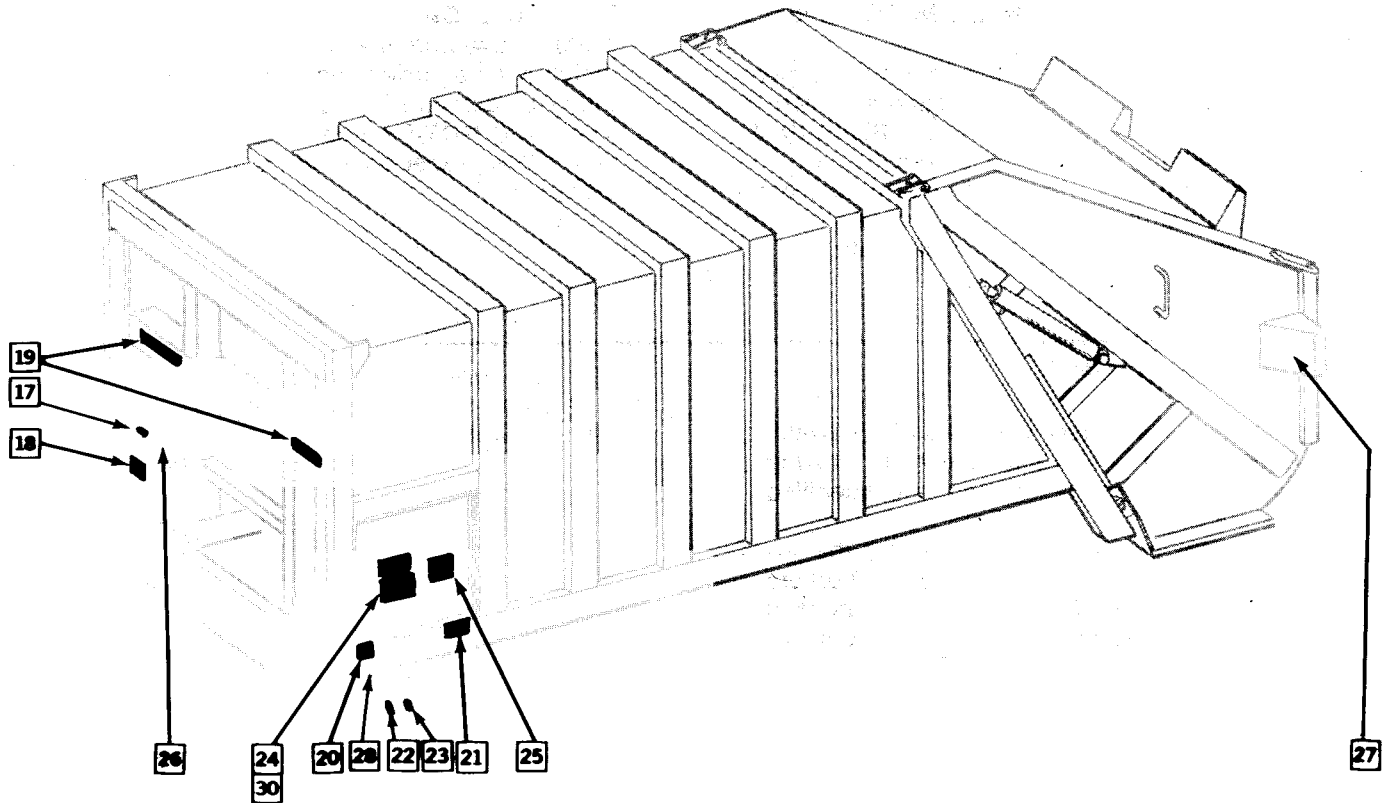
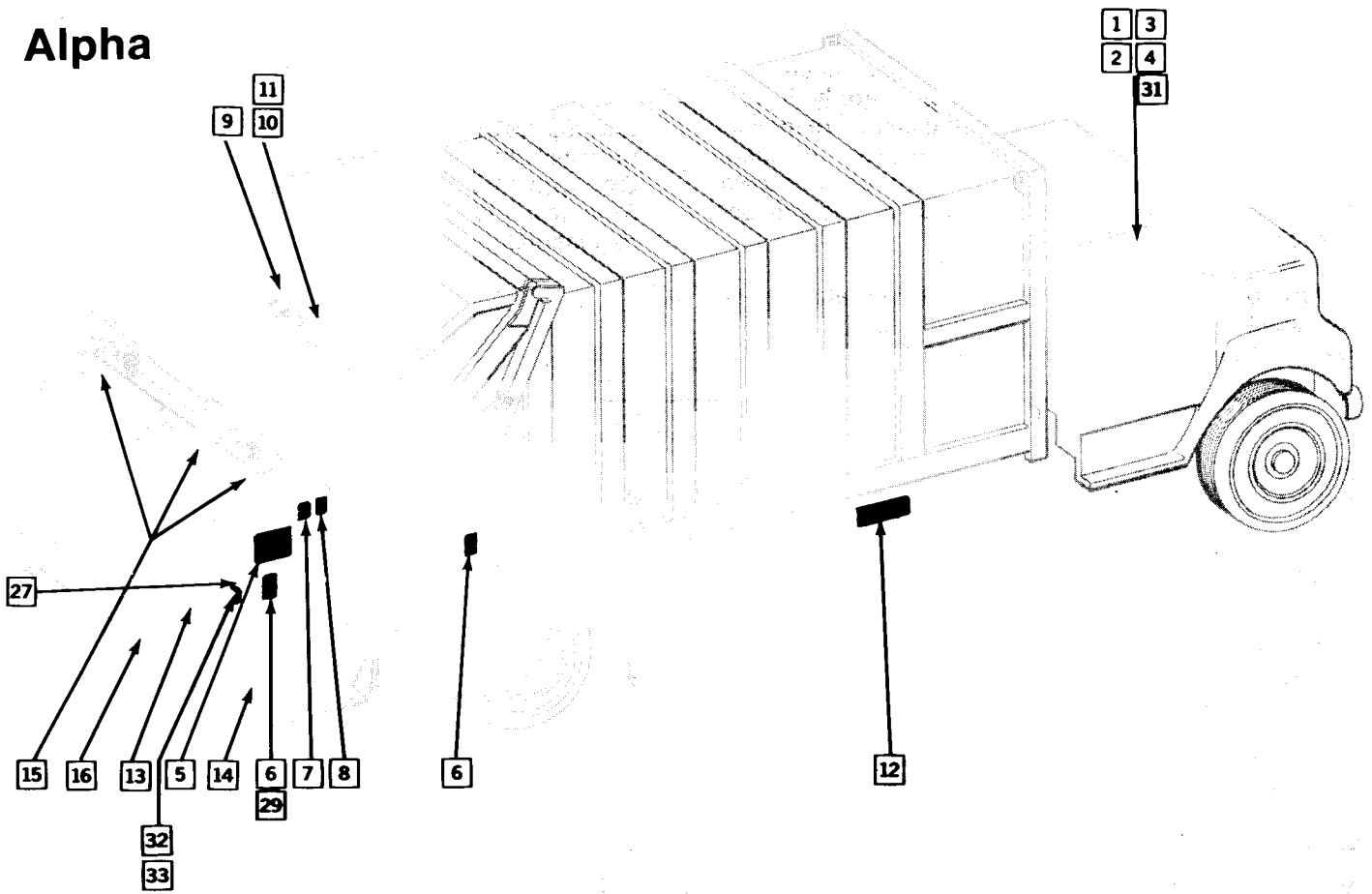
1. Never operate machinery while wearing jewelry or loose clothing which may catch on moving parts. Wear proper safety equipment as specified by your employer.
2. Never operate machinery while under the influence of intoxicants or narcotics. Workers under the influence of intoxicants or narcotics present a hazard to themselves and others.
3. Perform checks listed under Pre-operation "Walk-around" inspection in Section 3, OPERATION. Never start or operate any malfunctioning equipment.
4. Operators will not attempt to perform any service procedures on the equipment. Proper servicing requires specialized tools and procedures. Service must be performed by authorized personnel only, following procedures in the ALPHA Service Manual.
5. Walk completely around vehicle to make sure all persons are clear of the unit before starting the unit.



SECTION 2

SAFETY PRECAUTIONS

Alpha



SAFETY PRECAUTIONS

CAUTION
TAILGATE
OPEN

1

CAUTION

DO NOT OPERATE
VEHICLE AT HIGHWAY
SPEEDS WITH POWER
TAKE-OFF ENGAGED

2

CAUTION

DO NOT OPERATE VEHICLE AT
SPEED IN EXCESS OF 10 MPH OR
FOR DISTANCES OVER 2 TENTHS
MILE OR IN REVERSE GEAR WHEN
RIDER OR RIDERS ARE ON RIDING
STEPS.

3

SOLENOID
MUST BE OFF WHEN
TRUCK IS PARKED.
OFF ON

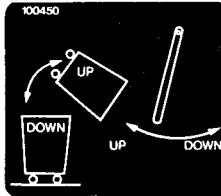
4

⚠ DANGER



STAND CLEAR
WHEN TAILGATE
IS IN MOTION &
DURING UNLOADING
CYCLE. DO NOT
STAND UNDER OR
CROSS UNDER
RAISED TAILGATE

6

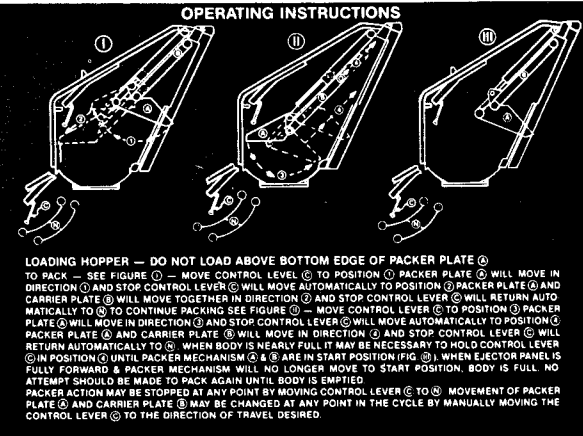


7

CAUTION

RIDING STEP SHALL NOT BE USED
WHEN SPEEDS ARE EXPECTED TO
EXCEED 10 MPH OR WHEN DISTANCE
TRAVELED WITHOUT STOPPING WILL
EXCEED 2 TENTHS OF ONE MILE.
RIDING STEP SHALL NOT BE USED
WHEN VEHICLE IS MOVING BACKWARD.
DO NOT MOUNT OR DISMOUNT RIDING
STEP WHEN VEHICLE IS IN MOTION.

8



LOADING HOPPER — DO NOT LOAD ABOVE BOTTOM EDGE OF PACKER PLATE ①
TO PACK — SEE FIGURE ① — MOVE CONTROL LEVER ② TO POSITION ① PACKER PLATE ③ WILL MOVE IN
DIRECTION ① AND STOP CONTROL LEVER ④ WILL MOVE AUTOMATICALLY TO POSITION ② PACKER PLATE ③ AND
CARRIER PLATE ⑤ WILL MOVE TOGETHER IN DIRECTION ② AND STOP CONTROL LEVER ④ WILL RETURN AUTO-
MATICALLY TO ② TO CONTINUE PACKING SEE FIGURE ② — MOVE CONTROL LEVER ② TO POSITION ③ PACKER
PLATE ③ WILL MOVE IN DIRECTION ③ AND STOP CONTROL LEVER ④ WILL MOVE AUTOMATICALLY TO POSITION ④
PACKER PLATE ③ AND CARRIER PLATE ⑤ WILL MOVE IN DIRECTION ③ AND STOP CONTROL LEVER ④ WILL
RETURN AUTOMATICALLY TO ② WHEN BODY IS NEARLY FULL IT MAY BE NECESSARY TO HOLD CONTROL LEVER
② IN POSITION ③ UNTIL PACKER MECHANISM ⑥ & ⑦ ARE IN START POSITION (FIG ③). WHEN EJECTION PANEL IS
FULLY FORWARD & PACKER MECHANISM WILL NO LONGER MOVE TO START POSITION. BODY IS FULL. NO
ATTEMPT SHOULD BE MADE TO PACK AGAIN UNTIL BODY IS EMPTIED.
PACKER ACTION MAY BE STOPPED AT ANY POINT BY MOVING CONTROL LEVER ② TO ④. MOVEMENT OF PACKER
PLATE ③ AND CARRIER PLATE ⑤ MAY BE CHANGED AT ANY POINT IN THE CYCLE BY MANUALLY MOVING THE
CONTROL LEVER ② TO THE DIRECTION OF TRAVEL DESIRED.

5

LINE PULL

9

8,000 LB. CAPACITY

10

12,000 LB. CAPACITY

11

DANGER

DO NOT ENTER UNDER CHASSIS UNLESS
ENGINE OR POWER UNITS ARE STOPPED
AND IGNITION KEYS REMOVED

12

CAUTION

CONTAINER LATCH ARMS
MUST BE ENGAGED & LOCKED
ON CONTAINER AT ALL TIMES
DURING RAISING & LOWERING
OF CONTAINER

13

DANGER

**STAND CLEAR
AT ALL TIMES**

14

**HYDRAULIC
FLUID ONLY**

17

⚠ DANGER

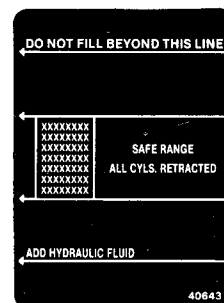


STAND CLEAR
WHEN BLADE
IS IN MOTION

15

NO STEP

16



40643

18



SECTION 2

SAFETY PRECAUTIONS

DANGER — DO NOT ENTER UNLESS BODY IS EMPTY & IGNITION OFF & KEY REMOVED

19

WARNING

THIS VEHICLE REQUIRES
OF OVERHEAD
CLEARANCE AS ORIGINALLY
MOUNTED.

20

CAUTION

KEEP ACCESS
DOOR CLOSED
WHEN EJECTOR
PANEL IS IN
MOTION

21

EJECTOR
EJECTOR
EJECTOR

22

TAILGATE
TAILGATE
TAILGATE

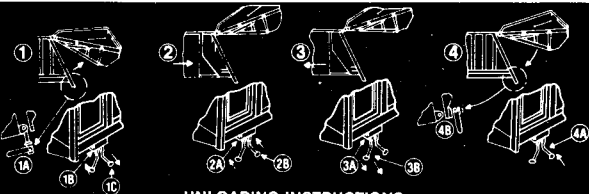
23

10FT. 6 IN.	11FT. 1 IN.	11FT. 8 IN.	12FT. 3 IN.
10FT. 7 IN.	11FT. 2 IN.	11FT. 9 IN.	12FT. 4 IN.
10FT. 8 IN.	11FT. 3 IN.	11FT. 10 IN.	12FT. 5 IN.
10FT. 9 IN.	11FT. 4 IN.	11FT. 11 IN.	12FT. 6 IN.
10FT. 10 IN.	11FT. 5 IN.	12FT. 0 IN.	12FT. 7 IN.
10FT. 11 IN.	11FT. 6 IN.	12FT. 1 IN.	12FT. 8 IN.
11FT. 0 IN.	11FT. 7 IN.	12FT. 2 IN.	12FT. 9 IN.

20

CAUTION DO NOT OPEN DOOR
UNLESS ALL PRESSURE AGAINST
THE PUSH-OUT PLATE HAS BEEN
RELEASED & THE HYDRAULIC
PUMP STOPPED.

25



UNLOADING INSTRUCTIONS

ENGAGE PUMP PLACE DASH MOUNTED SOLENOID IN "ON" POSITION. BE SURE AREA BEHIND UNIT IS CLEAR OF ALL PERSONNEL AND OBJECTS.

TO OPEN TAILGATE SEE FIGURE 1

1. LOOSEN CLAMPS ON EACH SIDE OF TAILGATE AND SWING CLEAR. 2. PRESS SPEED UP BUTTON AND HOLD. 3. MOVE REAR CONTROL LEVER OUTWARD AND HOLD. WHEN TAILGATE IS FULLY OPEN RELEASE CONTROL LEVER AND SPEED UP BUTTON. DO NOT ALLOW ANYONE TO STAND OR CROSS UNDER THE OPEN TAILGATE.

TO UNLOAD BODY SEE FIGURES 2 & 3

4. PRESS SPEED UP BUTTON AND HOLD. 5. MOVE FRONT CONTROL LEVER INWARD. HOLD UNTIL REARWARD TRAVEL OF EJECTOR PANEL STOPS. 6. PRESS SPEED UP BUTTON. 7. MOVE FRONT CONTROL LEVER OUTWARD UNTIL EJECTOR BAR IS FULLY RETRACTED. REPEAT 2 AND 3 UNTIL BODY IS EMPTY. RETRACT EJECTOR BAR 8. AFTER BODY IS EMPTY.

TO CLOSE TAILGATE SEE FIGURE 4

9. DISENGAGE PUMP MOVE UNIT FORWARD SLOWLY UNTIL TAILGATE IS CLEAR OF THE EXPELLED LOAD. BE SURE AREA UNDER AND AROUND TAILGATE IS CLEAR OF ALL PERSONNEL OR OBJECTS BEFORE CLOSING. MOVE REAR LEVER. 10. GENTLY INWARD TO ALLOW TAILGATE TO CLOSE. DO NOT ALLOW TAILGATE TO SLAM SHUT. SWING BOTH TAILGATE CLAMPS BACK TO LATCH POSITION 11. AND TIGHTEN EVENLY AND SECURELY.

CAUTION

TAILGATE MUST BE FULLY OPEN BEFORE EXPELLING LOAD. DO NOT MOVE UNIT WITH TAILGATE RAISED MORE THAN NECESSARY. DO NOT TRAVEL WITH TAILGATE CLAMPS UNLATCHED OR LOOSE. NEVER LEAVE UNIT UNATTENDED WHEN TAILGATE IS OPEN. ALWAYS SET BRAKE WHEN LEAVING THE CAB.

24

31

LOCATE NEAR P.T.O. CONTROL

PLACE THIS PART OF DECAL ON SUN VISOR

27000

POWER TAKE-OFF OPERATION

I. MECHANICAL TRANSMISSION

1. A power take-off is, and should be, operated as an integral part of the main transmission.
2. Before adding the power take-off load or out of gear, disengage the clutch and wait for transmission or P.T.O. gears to stop rotating.
3. Shift power take-off into gear.
4. Shift transmission into neutral (This will start transmission gears turning).

C. WITH ENGINE CRANKEN OVER:

1. Shift P.T.O. into gear before starting engine. This procedure should eliminate gear clash.
2. POWER SHIFT P.T.O.'s
3. Engage P.T.O. with engine at idle speed.

WARNING: DURING EXTREMELY COLD WEATHER (30° F. OR 37° F. OR LOWER) AND USE REMOTE POWER TAKE-OFFS MAY INCORPORATE TRANSMISSION POWER EVEN THOUGH IT IS DISCONNECTED. CONSULT YOUR OWNERS MANUAL FOR FURTHER EXPLANATION.

CAUTION

This vehicle is equipped with a POWER TAKE-OFF. It is a safety hazard to operate the P.T.O. while the vehicle is in motion. Do not operate the P.T.O. while the vehicle is in motion. Do not operate the P.T.O. while the vehicle is in motion.

CHELSEA

FILTER ELEMENT CHANGE

TO ENSURE OIL CLEANLINESS AND LONGER MACHINE LIFE, CHANGE THE ELEMENT AT INTERVALS OF 20 HRS., 50 HRS., AND AT 250 HR. INTERVALS THEREAFTER.

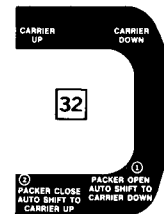
26

DRIVER SIGNAL

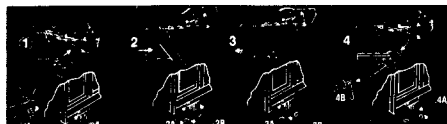
27

ENGINE
SPEED-UP

28



32



UNLOADING INSTRUCTIONS

ENGAGE PUMP PLACE DASH MOUNTED SOLENOID IN "ON" POSITION. BE SURE AREA BEHIND UNIT IS CLEAR OF ALL PERSONNEL AND OBJECTS.

TO OPEN TAILGATE SEE FIGURE 1

1. LOOSEN CLAMPS ON EACH SIDE OF TAILGATE AND SWING CLEAR. 2. PRESS SPEED UP BUTTON AND HOLD. 3. MOVE REAR CONTROL LEVER OUTWARD AND HOLD. WHEN TAILGATE IS FULLY OPEN RELEASE CONTROL LEVER AND SPEED UP BUTTON. DO NOT ALLOW ANYONE TO STAND OR CROSS UNDER THE OPEN TAILGATE.

TO UNLOAD BODY SEE FIGURES 2 & 3

4. PRESS SPEED UP BUTTON AND HOLD. 5. MOVE FRONT CONTROL LEVER INWARD. HOLD UNTIL REARWARD TRAVEL OF EJECTOR PANEL STOPS. 6. PRESS SPEED UP BUTTON. 7. MOVE FRONT CONTROL LEVER OUTWARD UNTIL EJECTOR BAR IS FULLY RETRACTED. REPEAT 2 AND 3 UNTIL BODY IS EMPTY. RETRACT EJECTOR BAR 8. AFTER BODY IS EMPTY.

TO CLOSE TAILGATE SEE FIGURE 4

9. DISENGAGE PUMP MOVE UNIT FORWARD SLOWLY UNTIL TAILGATE IS CLEAR OF THE EXPELLED LOAD. BE SURE AREA UNDER AND AROUND TAILGATE IS CLEAR OF ALL PERSONNEL OR OBJECTS BEFORE CLOSING. MOVE REAR LEVER. 10. GENTLY INWARD TO ALLOW TAILGATE TO CLOSE. DO NOT ALLOW TAILGATE TO SLAM SHUT. SWING BOTH TAILGATE CLAMPS BACK TO LATCH POSITION 11. AND TIGHTEN EVENLY AND SECURELY.

CAUTION

TAILGATE MUST BE FULLY OPEN BEFORE EXPELLING LOAD. DO NOT MOVE UNIT WITH TAILGATE RAISED MORE THAN NECESSARY. DO NOT TRAVEL WITH TAILGATE CLAMPS UNLATCHED OR LOOSE. NEVER LEAVE UNIT UNATTENDED WHEN TAILGATE IS OPEN. ALWAYS SET BRAKE WHEN LEAVING THE CAB.

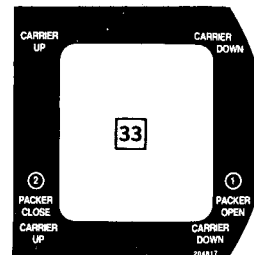
30

DANGER



STAND CLEAR
WHEN TIPPER
IS IN MOTION

29



33

SAFETY PRECAUTIONS

OPERATION
GENERAL

1. It is the operator's responsibility to ensure that operation of the unit is in accordance with the guidelines contained in the Operator's manual and in accordance with all applicable codes including Occupational Safety and Health Act (OSHA) and American National Standards Institute (ANSI) regulations.
2. Do not attempt to operate this equipment without proper training.
3. Move the vehicle as slowly as possible without stalling when traveling in reverse.
4. Always make sure the roadway is clear before traveling in reverse.
5. Do not travel in reverse for distances greater than those dictated by local ordinances. If reverse travel exceeds 10 feet, use a "spotter" or move the vehicle in 10 foot increments only, and then check to make sure the roadway is clear between increments.
6. Do not attempt to dislodge any material above waist level unless wearing eye protection such as "approved" side shielded safety glasses or a full face shield.
7. Never use the unit to push or tow another vehicle.
8. Never unload uphill or against a pile of refuse or into the bank of a hill.
9. Never place head, body, fingers, or any limbs into a scissors point or pinch point on the equipment.
10. Before operating the vehicle the driver must be thoroughly familiar with the employer's safety program concerning traffic rules, warning devices, and hand signals.
11. Know where to get assistance in the event of an emergency.
12. Know your machine. Know the location and function of all controls, gauges, instruments and protective devices.
13. Wear your seat belt.
14. Start the engine following the manufacturer's recommended procedure.
15. Always set the parking brake before leaving the cab.
16. Turn on appropriate warning lights, put on a safety vest, protective glasses, and protective shoes.
17. All service opening covers and access doors must be maintained and latched in place while operating equipment.
18. Ensure all co-workers are in view before operating or moving any controls or the unit.
19. Ensure that there is sufficient overhead clearance before operating the unit.
20. Ride only in the cab or on riding platforms designed for that purpose. Riding steps shall not be used when speeds are expected to exceed 10 mph or when distance traveled without stopping will exceed 2/10 of one mile. Do not mount or dismount riding step when vehicle is in motion.
21. Never allow anyone to ride on the steps when the vehicle is backing up.
22. Stop the vehicle immediately if warning lights for the TAILGATE AJAR system come on.
23. Never use controls or hoses for hand holds when mounting or dismounting. Controls and hoses are movable. They do not provide proper support and may cause accidental equipment movement. Make sure the backup alarm is working properly.
24. Always ensure that all persons are clear before raising or lowering the tailgate. It is the operator's responsibility to warn all persons not to stand or cross under a raised tailgate.
25. Do not move the vehicle with the tailgate raised except during unloading and then only as necessary to clear the load before lowering.
26. Stand clear when the tailgate is being raised or lowered and during the unloading cycle. If it is necessary to manually clear debris from the hopper, use a long metal probe and DO NOT stand under the tailgate.
27. Never load the hopper above the loading sill.
28. Never allow material to extend outside of the hopper when packing.
29. Allow the packer plate control lever and carrier plate control lever to shift automatically.
30. To avoid possible bodily injury or equipment damage, lower the tailgate slowly.
31. Never enter the body unless the pushout plate clamp is released, PTO disengaged, and ignition key removed and placed in your pocket.
32. Do not attempt to load refuse into the hopper after the packing cycle has begun. The packer plate must be in the "home" position and stopped before loading the hopper.
33. The dashboard solenoid switch must be "OFF" between pickups or when parked. This prevents inadvertent engine speed-up if the tailgate carrier plate control lever is shifted.
34. The tailgate clamps must be tightened securely before starting to load.
35. Do not step on the throttle pedal while the speed up system is engaged.
36. Vehicles with automatic transmissions require the shift lever to be in gear to engage the PTO and then shifted to neutral to activate the PTO/pump.



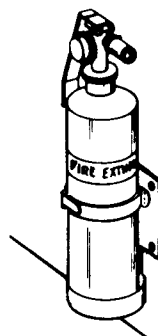
SAFETY PRECAUTIONS

— HYDRAULICS:

1. Hydraulic fluid operates under high temperatures. Avoid contact with piping, hoses or cylinders to prevent burns.
2. Never use hands to check for leaks. Hydraulic fluid escaping under pressure may cause injury.
3. In case of injury seek proper medical treatment immediately.

FIRE PROTECTION

1. Keep a fire extinguisher accessible at all times, as recommended by the Bureau of Motor Carrier Safety.
2. Never use lighted smoking materials, open flame or sparks when working with flammable materials such as fuel tanks or storage batteries.
3. Never use an open flame as a light source.
4. Never load ashes or other materials which might be smoldering. These materials could ignite refuse in the packer body.



HOUSEKEEPING

Good housekeeping habits are a major factor in accident prevention.

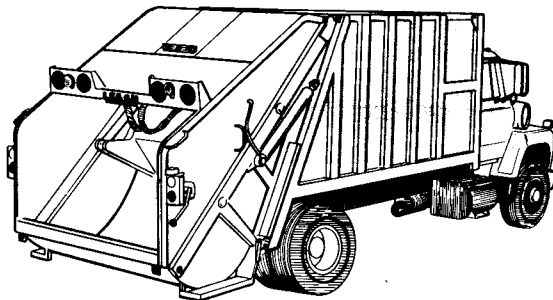
1. Keep handrails and steps clean and free of grease or debris.
2. Do not store brooms or other equipment where they could inadvertently activate Packer controls.

CLEANLINESS

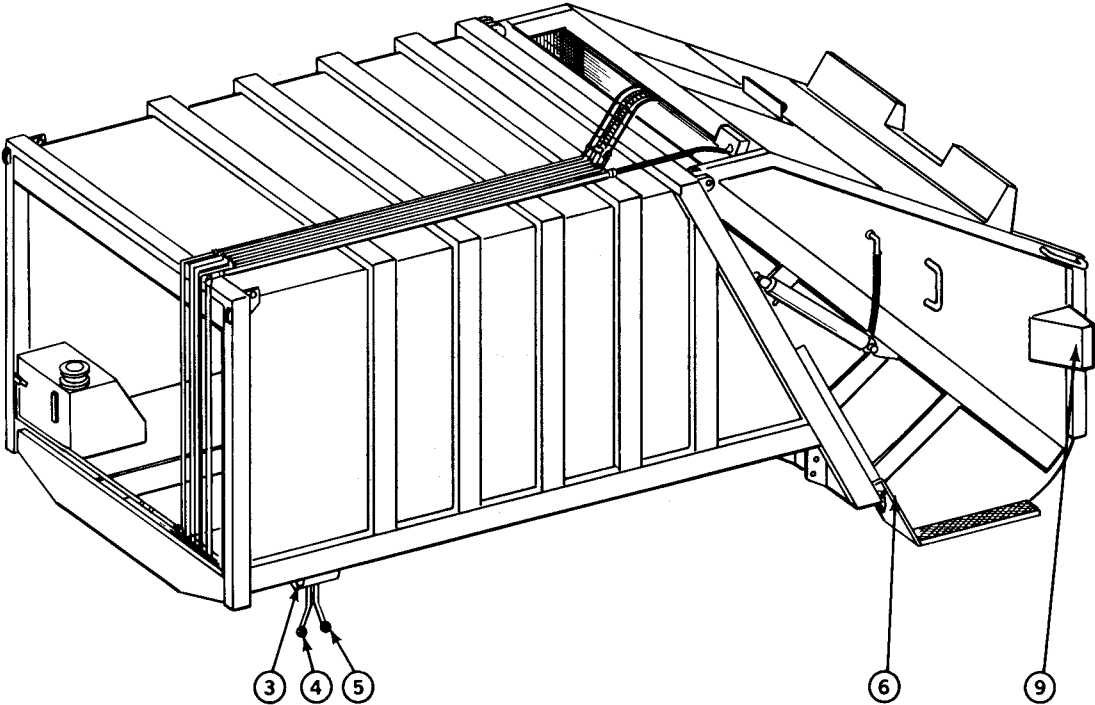
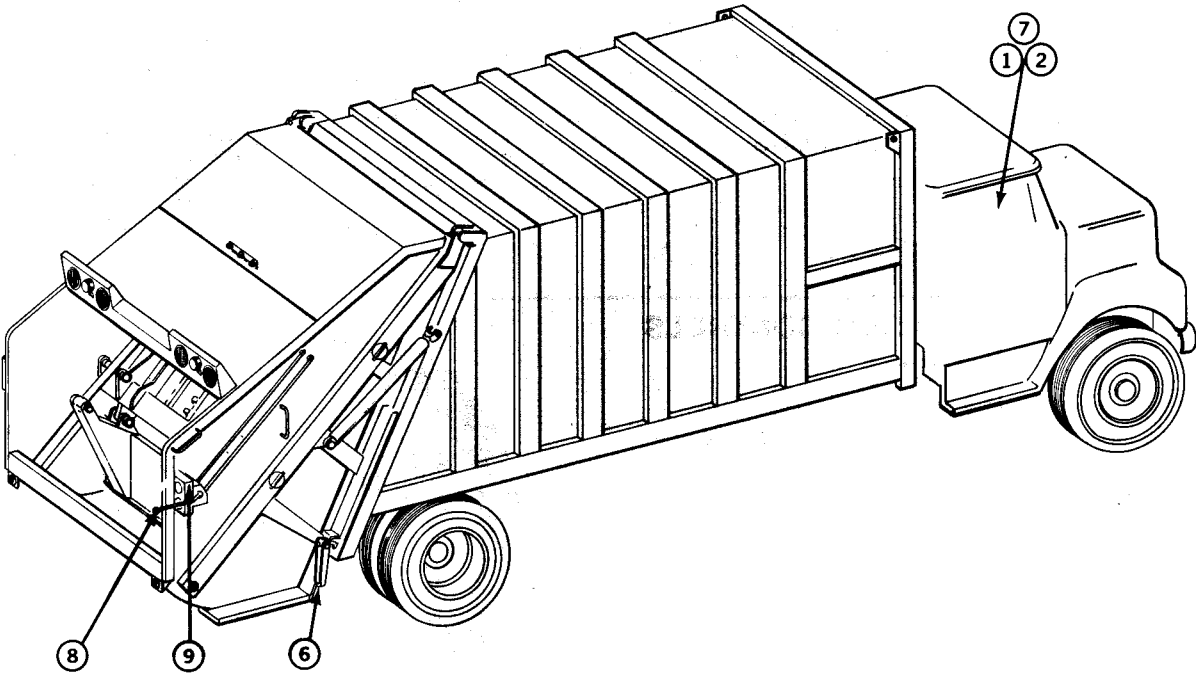
1. Rubbish, scrap paper, and litter are highly combustible. Such material should be stored in metal containers entirely clear of sparks and flame.

SHUTDOWN

1. Put all controls in neutral
2. Set parking brake.
3. Disengage PTO.
4. Shut off engine.
5. Shut off solenoid dashboard switch.
6. Remove key.
7. Lock vehicle.



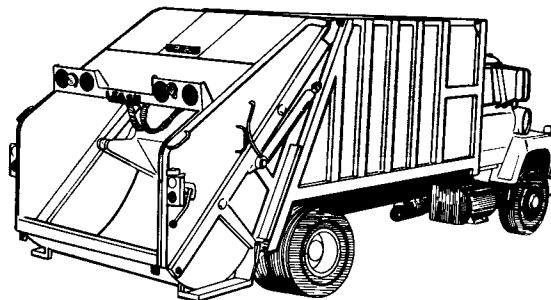
LOCATION OF OPERATING CONTROLS



SECTION 3 OPERATION

GENERAL

This section will provide all of the instructions necessary to operate the Alpha. However, prior to attempting any operation of the unit, make sure you are familiar with all of the safety information contained in Section 2, SAFETY PRECAUTIONS.



DESCRIPTION OF OPERATING CONTROLS

⚠ DANGER

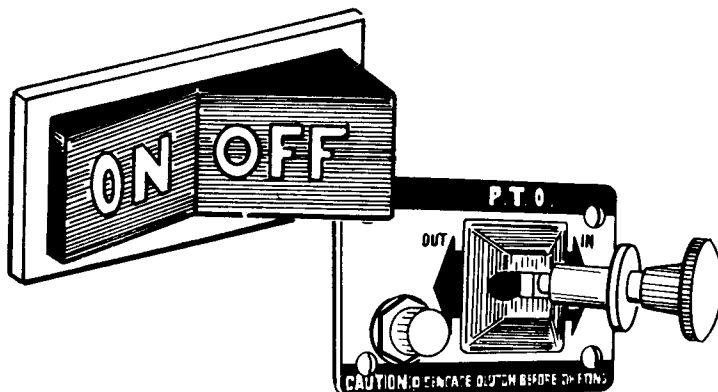
The following information is for descriptive purposes only. It is not to be misconstrued as operating instructions. For operating instructions, refer to **OPERATING PROCEDURES** later in this section.

There are only a few controls required for the complete and efficient operation of the Alpha. It is important that you know the location and function of each control before attempting to operate the unit. Refer to the accompanying illustrations for their locations.



PTO CONTROL (1)

The PTO (Power Take-Off) is engaged to put the hydraulic pump into operation. The exact location of the PTO control will vary depending on the type of PTO, truck cab style and control panel location. The PTO may be engaged by use of a lever, rocker switch, push-pull cable, toggle lever or positive control button depending on the style of PTO. Be sure to read all safety decals associated with the PTO before attempting operation.



SOLENOID ON-OFF SWITCH (2)

This switch energizes the engine speed-up system. It is located on the cab control panel (exact location is dependent on cab make and style).



NOTE

The engine speed-up system consists of the solenoid ON-OFF switch, a relay and solenoid mounted on the engine and connected to the carburetor (or governor on diesel engines), a speed-up pushbutton and a speed-up switch connected to operating control linkage on the Main Operating Valve. The function of the speed-up system is to speed the engine and provide more power to the hydraulic pump during operation of the various hydraulic cylinders.

ENGINE SPEED-UP PUSHBUTTON (3)

When depressed, this pushbutton switch will cause the engine to speed-up and supply more power to the hydraulic system. Located on the left side of the body, it is depressed by the operator when operating either the pushout lever or tailgate lift lever.

NOTE

Additional buttons may be installed with optional winches and container attachments. For further information see the LEACH Container Handling Systems Manual.



**SPEED-UP
BUTTON**

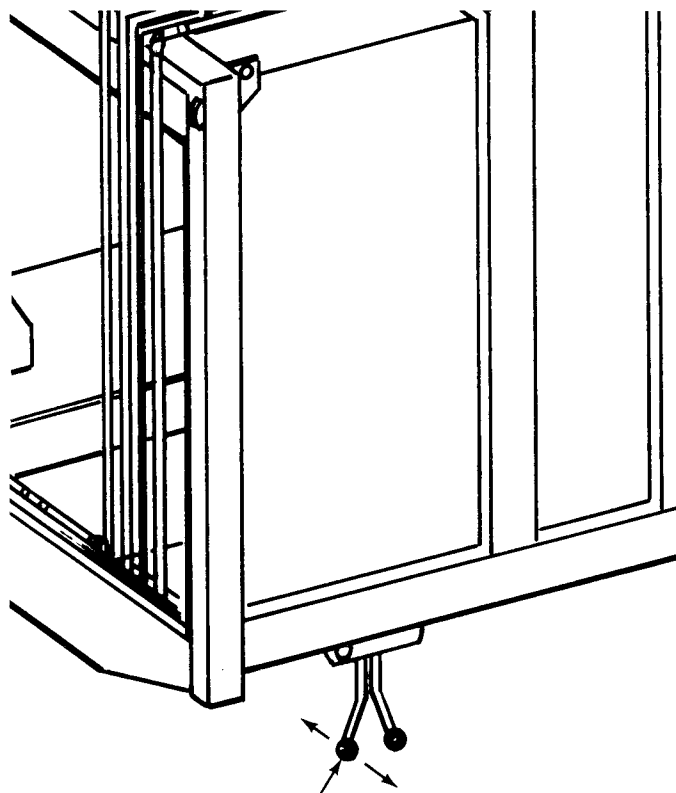
PUSHOUT LEVER (4) (STANDARD SYSTEM)

This lever, located on the left side of the packer body, is used by the operator to control the pushout plate. When pushed inward this lever clamps the pushout plate to the bar and extends the pushout cylinder to unload the body. When the lever is pulled outward the clamp connecting the pushout plate to the pushout bar is released, the pushout cylinder retracts; allowing the pushout plate to stay in its last position while the bar is pulled through it.

Pulling the lever outward at the proper time in the loading process will allow the pushout plate to slide forward, providing more room for additional trash.

(OPTIONAL TELESCOPIC SYSTEM) (4)

With the telescopic option, the lever works the same as the standard system described above, except that the pushout plate is connected directly to the pushout cylinder and will retract into the body when the pushout lever is pulled outward.

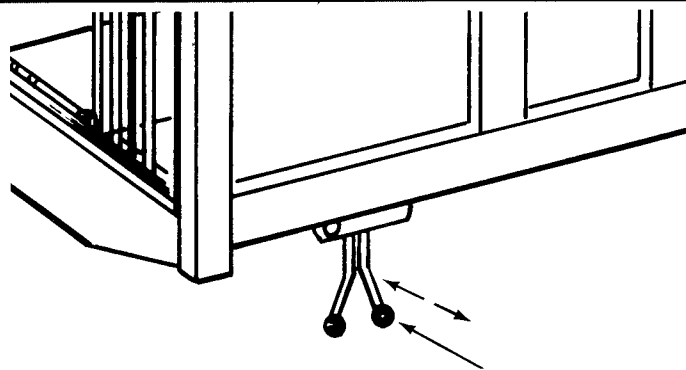


**PUSHOUT
LEVER**

TAILGATE LIFT LEVER (5)

This lever, mounted to the right of the pushout lever, is used to lift the tailgate for unloading. The lever is pulled outward to raise the tailgate.

Pushing the lever inward will lower the tailgate.



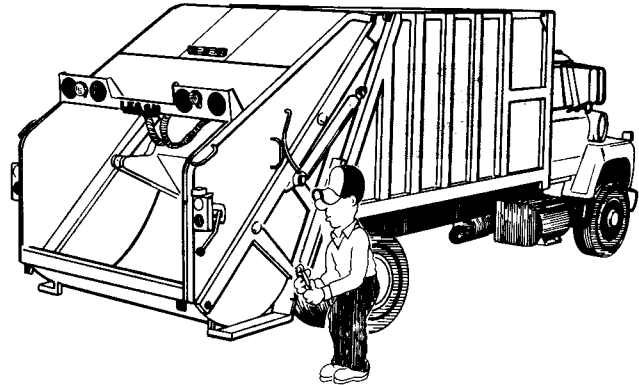
**TAILGATE
LIFT LEVER**

OPERATION**TAILGATE CLAMPS (6)**

A tailgate clamp is located on each side of the tailgate at the bottom where the tailgate rests against the body. They are used to secure the tailgate to the body during operation. They must be manually loosened and swung away from the body to raise the tailgate for unloading.

⚠ CAUTION

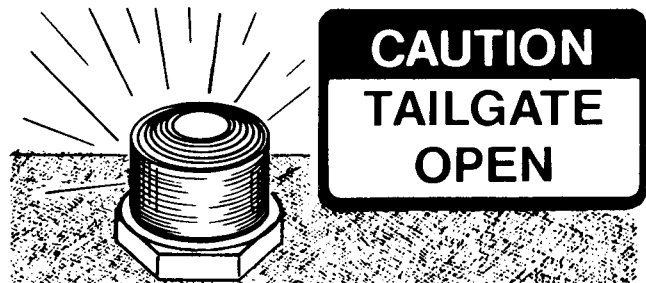
Before attempting to loosen the tailgate clamps, pressure against the tailgate must be relieved by opening the packer plate to the "interrupted cycle" stop position.

**TAILGATE "OPEN" LIGHT (7)**

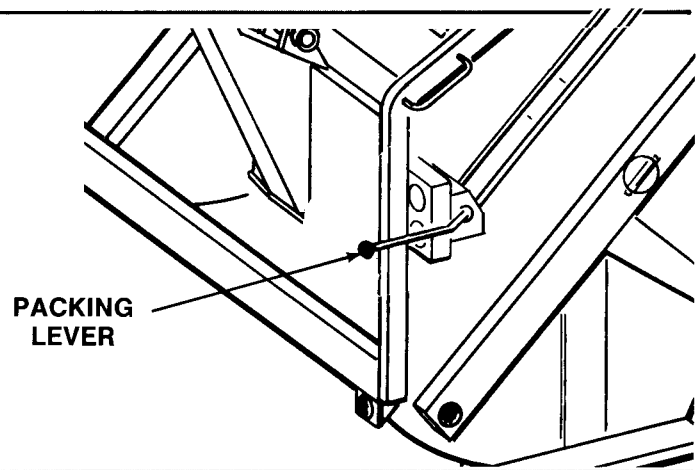
This warning light, located in the cab, will illuminate if the tailgate is ajar and the tailgate clamps are not secured in the closed position. Having the tailgate ajar will also sound the backup alarm and illuminate the backup lights.

⚠ CAUTION

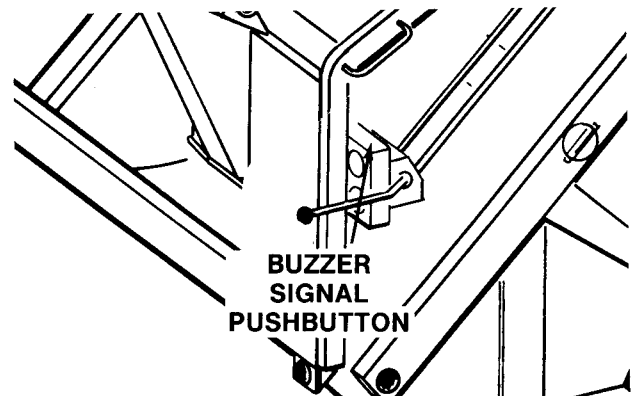
Operation of the unit with an illuminated or defective warning system can result in personal injury and equipment damage.

**PACKING LEVER (8)**

The packing lever is located on the right (curb) side of the tailgate. It is used by the operator to cycle the carrier and packer plates during the packing operation. The lever is moved out and down to position the carrier and packer plates to the "interrupted cycle" position. The lever is moved in and down to sweep the load from the hopper and pack it against the pushout plate. Anytime the packing lever is moved it automatically engages the speed-up switch to provide more engine power to the hydraulic system. The effective use of this lever comes with a little operating experience.

**BUZZER SIGNAL PUSHBUTTONS (9)**

These two pushbuttons, one located on each side of the tailgate, are connected to a buzzer mounted under the driver's seat, or under the dash in the truck cab. The operator depresses one of these pushbuttons to signal the driver when they are finished loading and ready for the truck to move ahead.

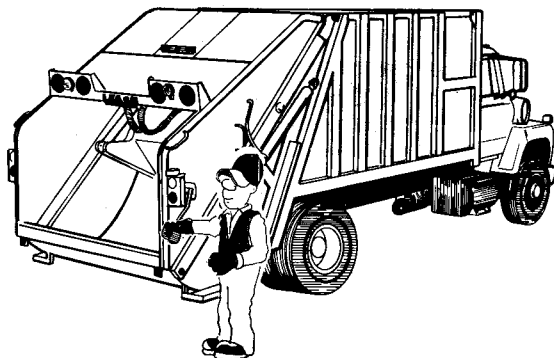


OPERATING PROCEDURES

This section of the manual provides instructions necessary to start and operate the Alpha, including specific instructions for loading, packing and unloading the unit.

NOTE

It is important that operators and mechanics understand these procedures.



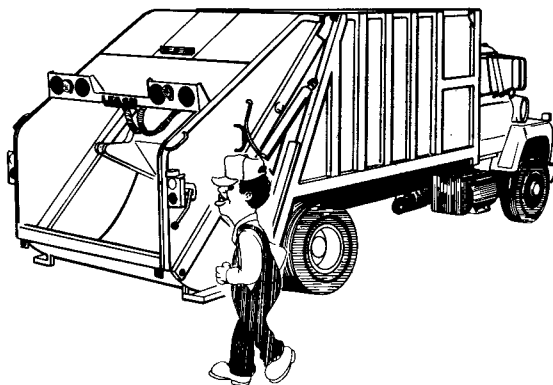
PRE-OPERATING WALK-AROUND INSPECTION

Each day, before starting the unit perform the following "walk-around" inspection.

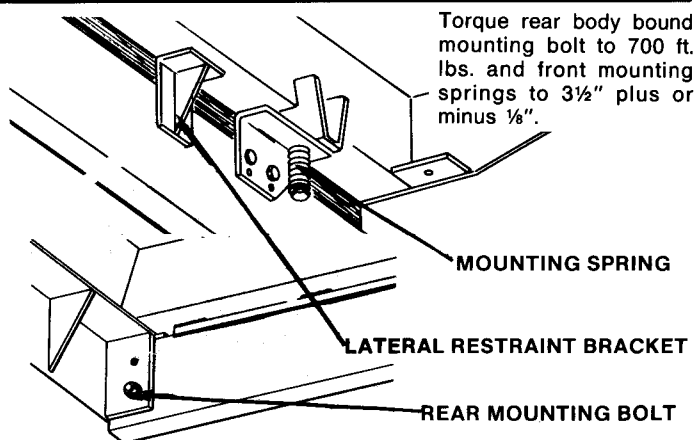
1. Refer to the decal location illustration in Section 2 SAFETY of this manual and make sure all decals are in place and readable. Replace any decals that are not.

NOTE

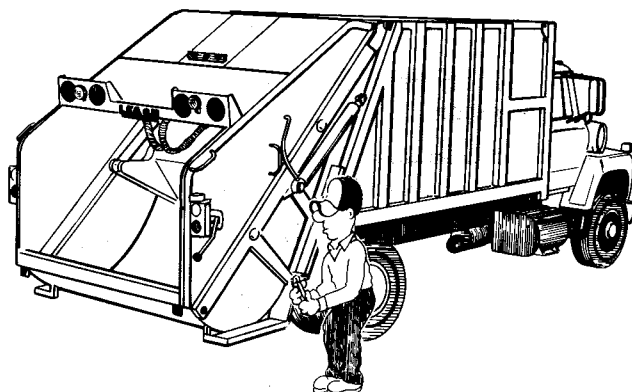
A decal kit, free of charge, is available from your local LEACH distributor.



2. As you are checking for decals, also look for fluid leaks on and around the unit. Check for fluid leaks at the hydraulic cylinders, valves and fittings.
3. Inspect the mounting sills and attaching hardware. Make sure everything is tight and that there are no broken or excessively worn parts. Check all bolts and fasteners for looseness, visible welds for cracks, and control levers for easy movement.



4. Make sure the tailgate clamps are in the closed position and securely tightened.

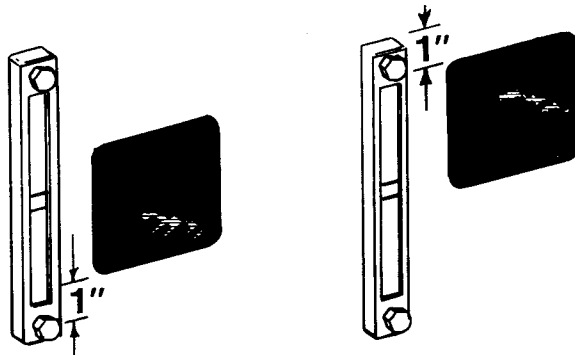


OPERATION

5. Check the hydraulic tank gauge to make sure the fluid is in the "safe" range. Add fluid, if necessary. (See Section 5, SPECIFICATIONS for the correct type of fluid to use.) The pushout cylinder must be retracted, and the tailgate down. The carrier plate should be in the "home" position, the packer plate should be open to check the hydraulic fluid level.

CLAMP

TELE



HYDRAULIC FLUID LEVEL DECAL LOCATION

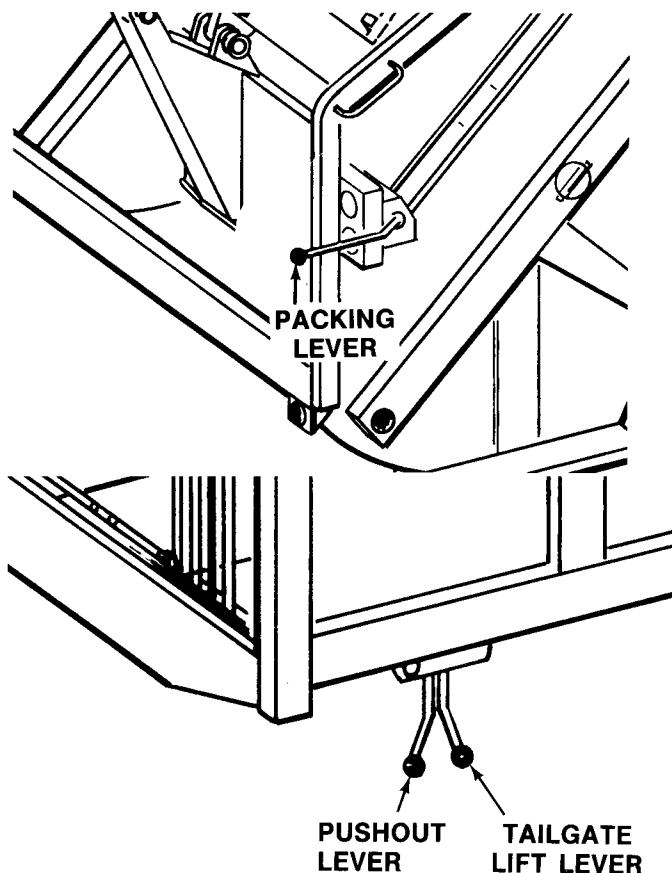
6. Make sure all operating levers are in the neutral position. Check:
 - a. Packing lever;
 - b. Pushout lever;
 - c. Tailgate lift lever.

⚠ CAUTION

Never operate the Alpha with any part of the control system or levers removed, serious damage will result.

⚠ DANGER

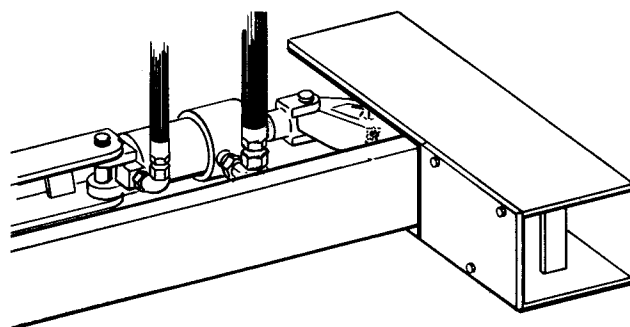
Never under any circumstances enter the body if the truck is running. Open the packer plate and release the pushout plate clamp before entering the body. Always make sure the truck engine is off and the keys are in your pocket before entering the body.



7. Look around the clamp and pushout plate area. Clean out any refuse caught in this area that could possibly hamper the clamp and pushout plate operation.

⚠ DANGER

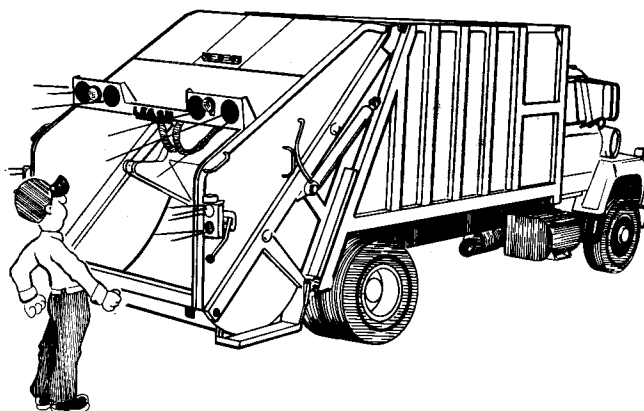
Never under any circumstances enter the body if the truck is running. Open the packer plate and release the pushout plate clamp before entering the body. Always make sure the truck engine is off and the keys are in your pocket before entering the body.



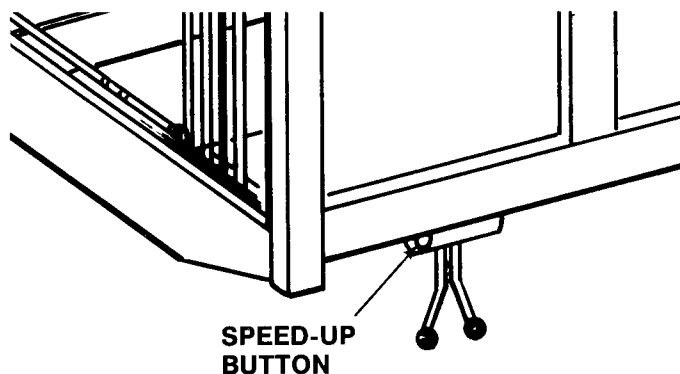
8. Start the truck according to the manufacturers instructions and while it is warming up, continue the walk-around inspection.
9. Check all of the operating and running lights. Make sure none are missing and that there are no burned out bulbs.

⚠ CAUTION

The "tailgate open" warning light should be off. Do not operate the unit if the light is illuminated.



10. With the engine running, the speed-up solenoid switch ON, the PTO engaged, the transmission in neutral, and the brakes applied, depress the speed-up push-button on the left side of the body. You should hear the engine speed-up.

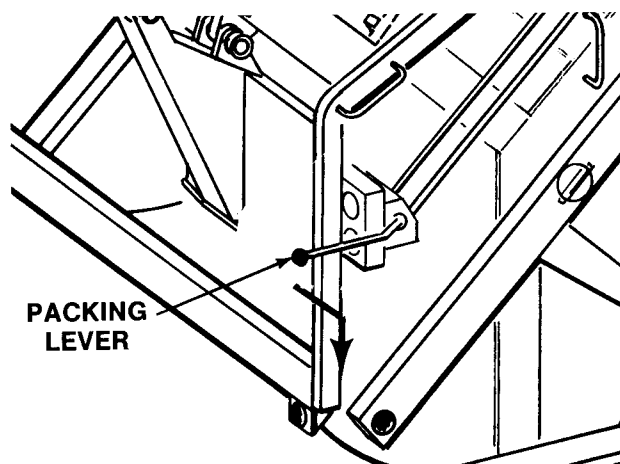


⚠ DANGER

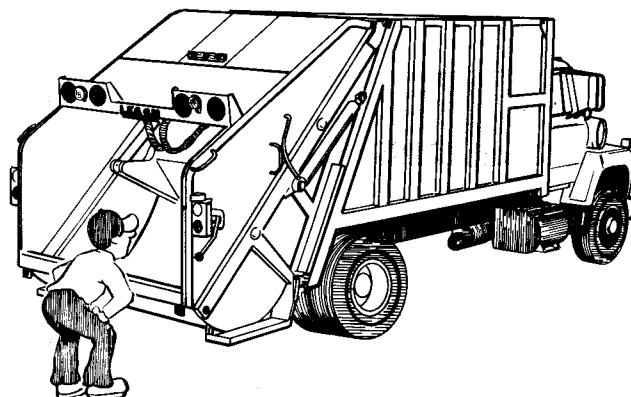
Never place hands in or near packer plate during operation, death or severe personal injury could result.

⚠ CAUTION

Never hold the packing lever in position by hand. Always engage and let go immediately. The only exception to this is at the end of a load. Not following this caution may lead to personal injury or damage to the equipment.

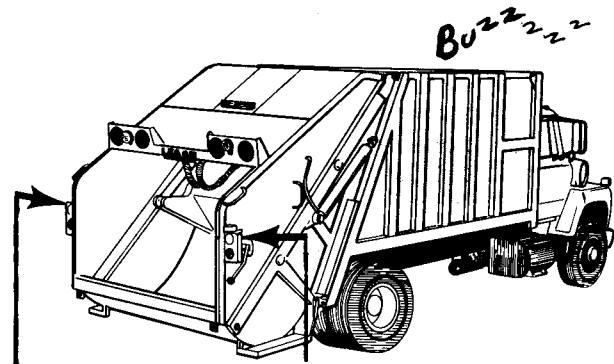


11. Move the packing lever out and down, and let go. Check for the following:
 - a. Engaging the packing lever will activate an engine speed-up switch, you should hear the engine speed-up;
 - b. Observe the carrier and packer plate movement — it should be smooth. The plates should automatically stop at the "interrupted cycle" position and;
 - c. Observe the carrier plate rollers. Make sure the rollers are turning freely and not sliding or sticking.
12. Move the packing lever in and down, and let go. Observe the packer and carrier plate movement — it should be smooth. The plates should stop automatically at the "home" position.

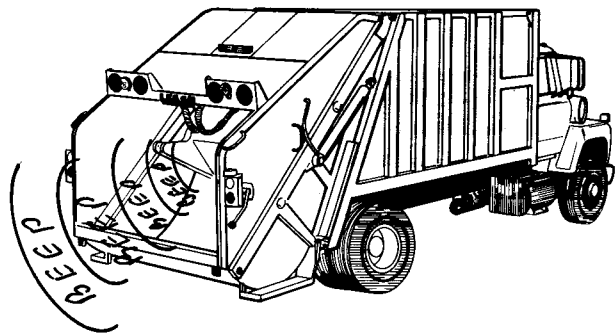


OPERATION

13. Depress the two buzzer signal pushbuttons located on both sides of the tailgate to make sure that the audible alarm located in the cab is working.

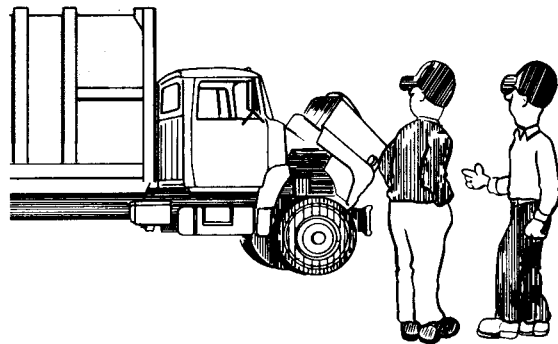
**BUZZER SIGNAL PUSHBUTTONS**

14. Back the unit up a few feet to ensure that the back-up alarm is working properly.
15. Loosen the tailgate clamps and swing out. Raise the tailgate approximately 6" and check to see if the tailgate ajar light on the dash is on and if the backup alarm is audible. (Do not have the unit in reverse).

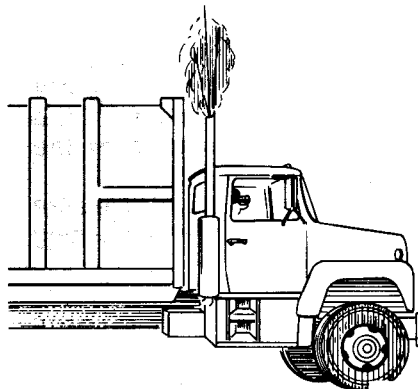
**⚠ WARNING**

Do not operate a unit that is in need of service or repair. Death, serious injury or damage to the equipment could result.

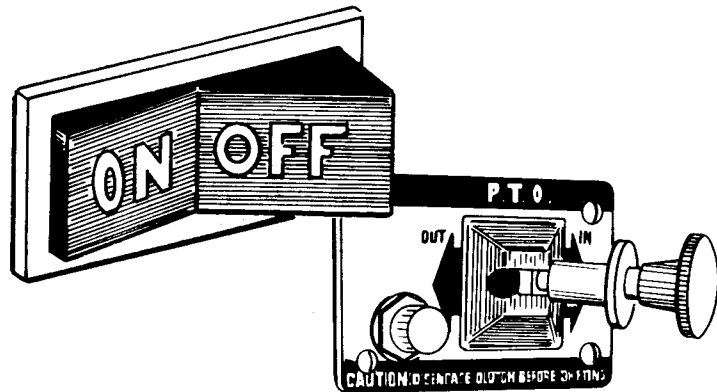
16. Report any problems found during the pre-operation walk-around inspection to the maintenance supervisor for service or repair, then place a tag on the steering wheel (Inoperative) and remove keys.

**START UP (OPERATING INSTRUCTIONS)**

1. Inspect and start the truck as described under Pre-Operational Walk-Around inspection above.



2. Engage the PTO control (to start the hydraulic pump).



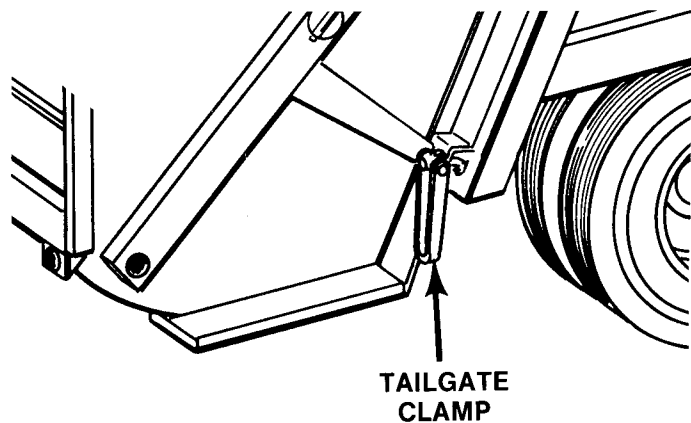
3. Place the solenoid switch in the ON position.



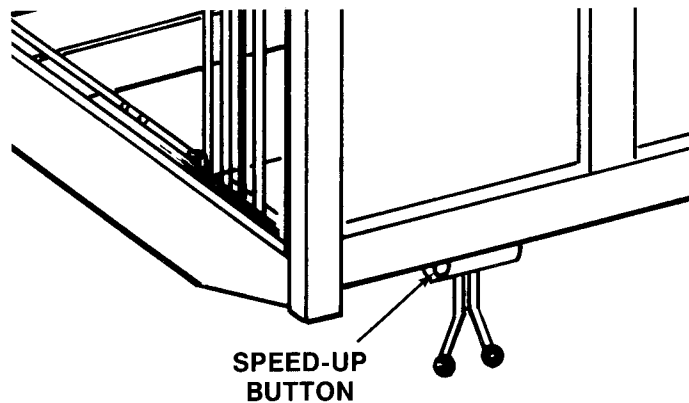
POSITIONING PUSHOUT PLATE

To load the unit, the pushout plate must be positioned toward the rear of the body.

1. Check tailgate clamps to make sure both are securely fastened.



2. Depress and hold the speed-up pushbutton



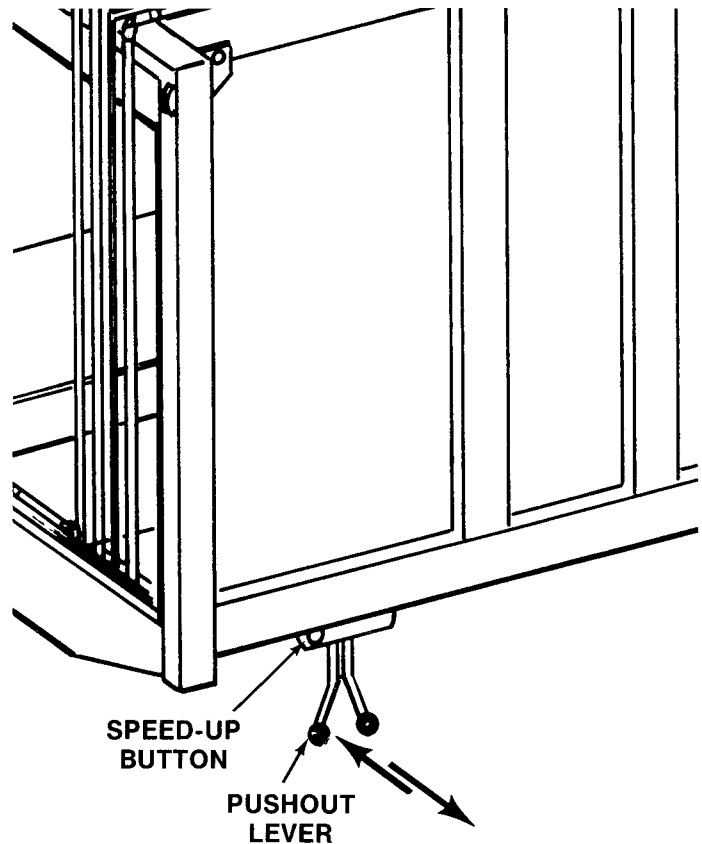
OPERATION

3. Push the pushout lever inward until the pushout cylinder is fully extended.

NOTE

On units with the telescopic pushout cylinder option, the pushout plate is now in position for loading.

4. Release the speed-up button and pull the pushout lever outward until the pushout cylinder is fully retracted.
5. Repeat steps 2, 3, and 4 until the pushout plate is as far back as it will go and then pull outward on the pushout lever to fully retract the pushout cylinder. Now extend the cylinder a few inches to reset the clamp.

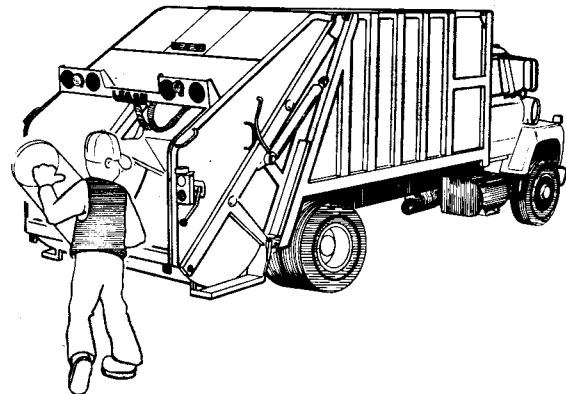
**LOADING THE HOPPER**

There are only a few, but important points to remember during loading of refuse.

1. Load hopper evenly on both sides.
2. Load heavy objects in the center of the hopper.
3. Do not load refuse higher than the loading edge.

CAUTION

Overloading the hopper can cause serious damage.

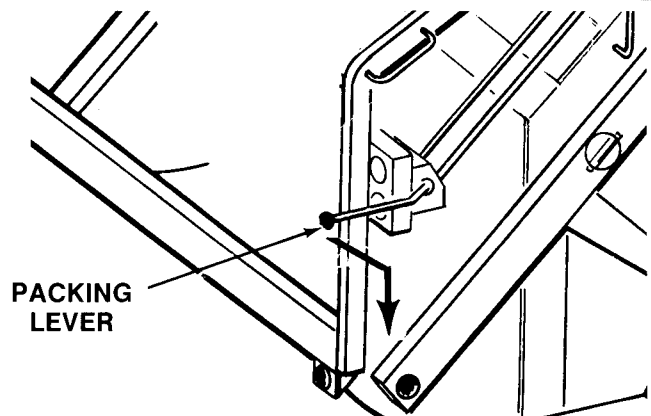
**PACKING THE LOAD****NOTE**

The compaction cycle can be stopped at any point by moving the packing lever to the center.

1. Start the packing cycle by moving the packing lever out and down; then let go.

Packer plate will open and packing lever will automatically shift.

The packer plate will move down to above the loading edge and stop in the "interrupted cycle" position with the packing lever shifting to neutral.



2. To finish the cycle, move the packing lever in and down; then let go.

CAUTION

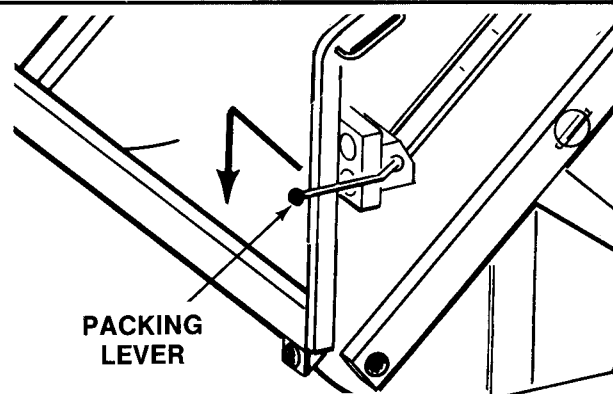
Stand clear of the hopper area during the packing cycle.

The packer plate will sweep the hopper and the packing lever will shift automatically. Then the packer plate will move up into the body and stop in the "home position" with the packing lever shifting to neutral.

3. Repeat steps 1 and 2 each time the hopper is filled to the loading edge.

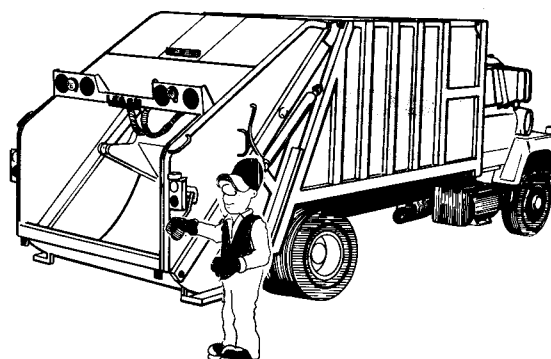
CLAMP PUSHOUT

As each load is packed into the body the load will become tighter and denser until the carrier plate stops short of the home position. With the packer in the interrupted cycle position, the operator pulls the pushout control lever to the front, releasing the clamp. The pushout plate will now slide forward as the packing cycle is completed. The operator once more pushes the pushout lever rearward to lock the bar to the pushout plate. (Packing is resumed). Packing the final hopper load on clamp pushout units is the only time that holding the packing lever in position (in and up) is permissible. This will ensure a tight pack.



CAUTION

Failure to periodically manually release the clamp can cause damage to the pushout bar and clamping components.



TELESCOPIC PUSHOUT

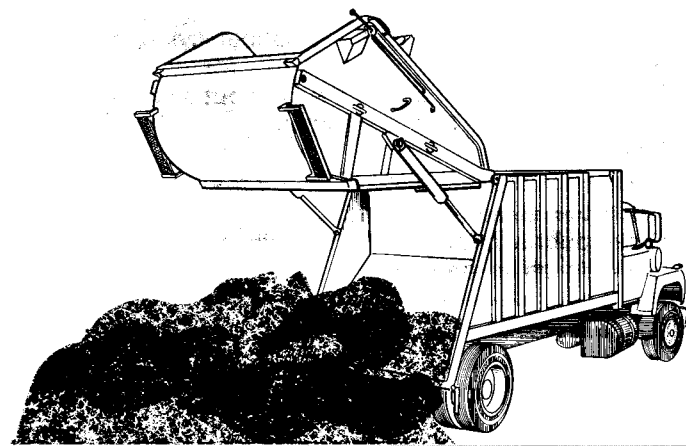
On units with the telescopic pushout cylinder option, the pushout plate is normally moved toward the front of the body automatically. When the resistance circuit is adjusted to produce maximum load density, it may become necessary to manually retract the telescopic pushout cylinder in order to allow the compacted refuse to move forward in the body. Also, if the packer plate stops short of the "home" position, the packer operating lever may need to be held (overridden) to allow the refuse to move the pushout plate toward the front of the body. When the pushout plate has reached the front of the body, the packer operating lever should not be overridden except to clear the final hopper load.

UNLOADING AT DUMPSITE

CAUTION

Do not unload uphill or against a pile of refuse.

1. Apply the brakes, engage the PTO, and ensure the transmission is in neutral. Relieve pressure on the tailgate by opening the packer plate to the "interrupted cycle" position.
2. Loosen both tailgate clamps and swing them out and forward as far as they will go.



OPERATION

LIFTING THE TAILGATE

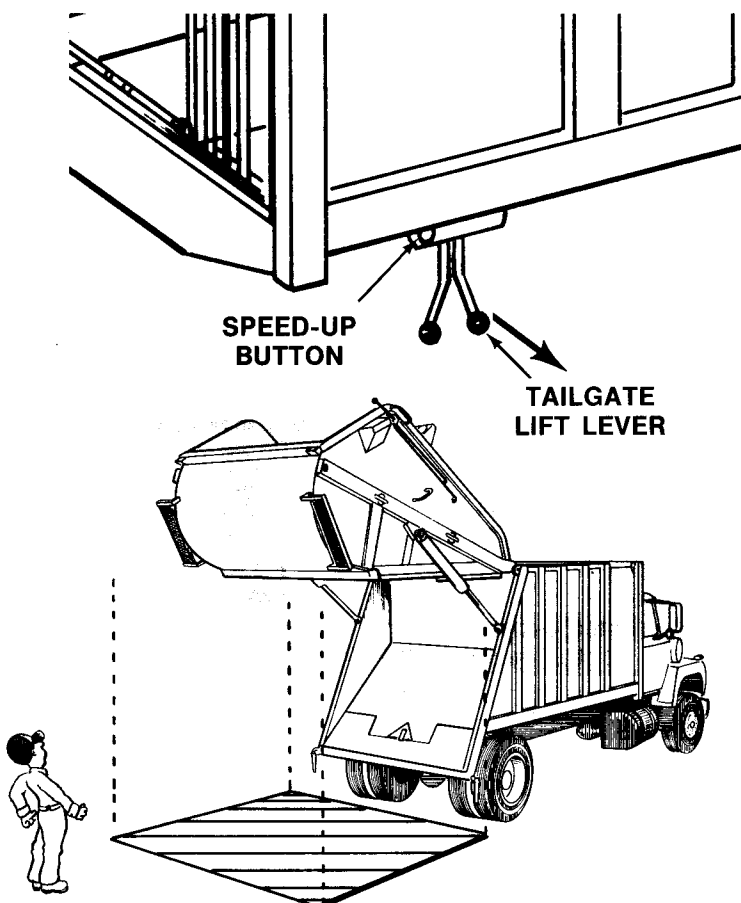
⚠ DANGER

Stand clear of the tailgate when raised. If you need to clean debris from the edges, use a pole while standing off to the side.

3. Depress and hold engine speed-up button.
4. Pull the tailgate lift lever outward and hold until the tailgate is fully raised.

⚠ CAUTION

"Tailgate open" light and backup lights should illuminate. The backup alarm should also sound.

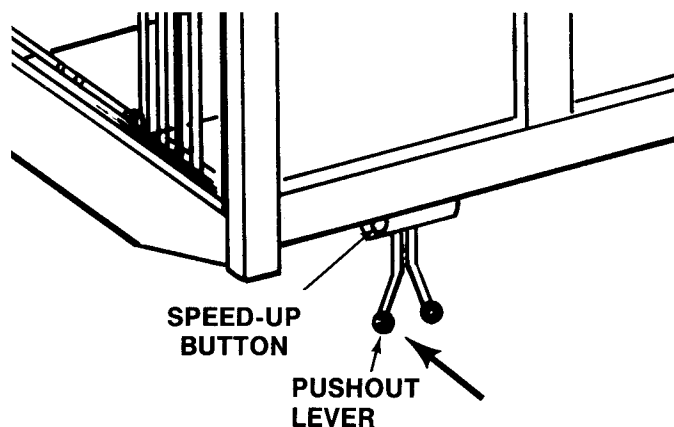


EJECTING THE LOAD

5. Still holding the engine speed-up button, push the pushout lever inward and hold until the pushout plate stops.

NOTE

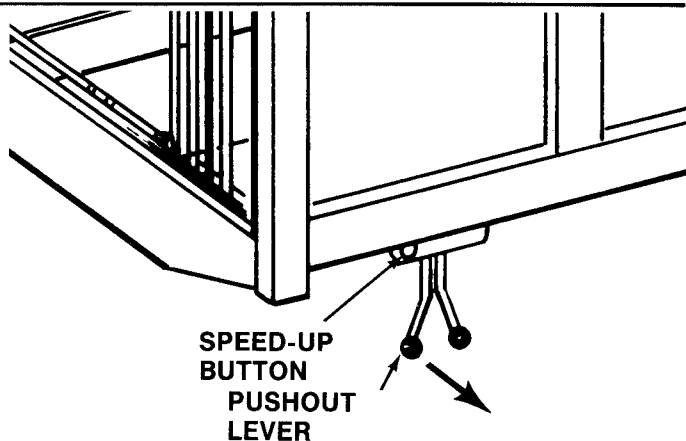
On units with the telescopic pushout cylinder option, this will eject the entire load — go on to step 8.



6. Release the speed-up button and pull the pushout lever outward until the pushout cylinder is fully retracted.
7. Repeat steps 5 and 6 until the pushout plate is as far back as it will go; completely ejecting the load.
8. Slowly pull the unit ahead to clear the refuse pile when the tailgate is lowered.
9. Clear debris from the edges with a pole while standing off to one side.

⚠ CAUTION

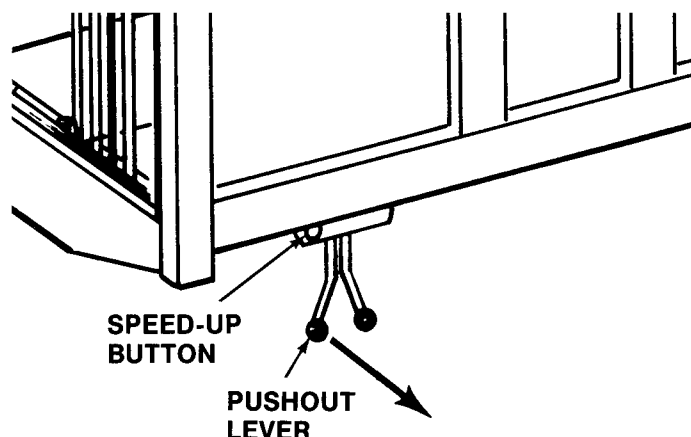
Never drive the unit more than 10 feet with the tailgate in a raised position.



10. Pull the pushout lever outward to completely retract the pushout cylinder. Now push the pushout lever rearward extending the pushout cylinder a few inches, thus clamping the bar to the pushout plate.

CAUTION

With the telescopic circuit, if the unit is going to travel over one mile empty, completely retract the cylinder. When packing is about to resume fully extend the cylinder and start packing.

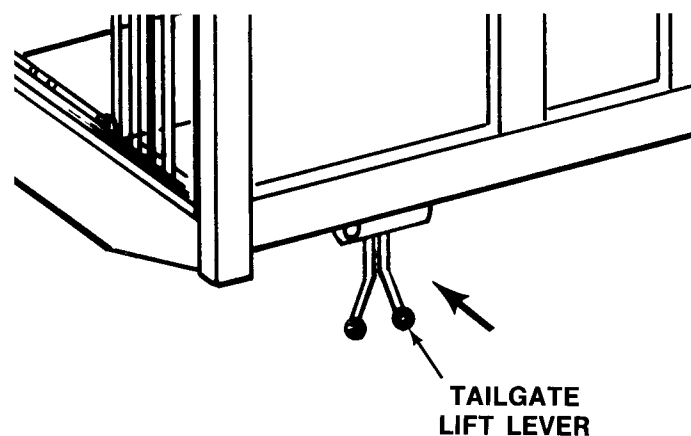


LOWER THE TAILGATE

1. Push inward on the tailgate lift lever slowly and in small increments to lower the tailgate a little at a time. AVOID SLAMMING SHUT the tailgate.
2. Place the tailgate clamps in the closed position and tighten securely.

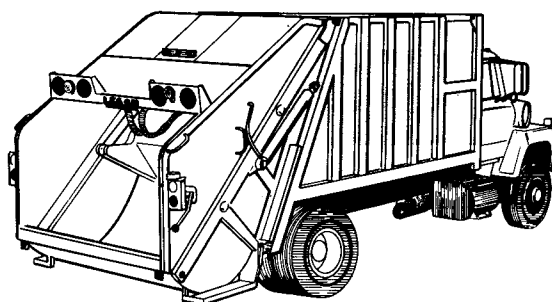
NOTE

"Tailgate open" light, back-up lights and back-up alarm should be off after closing the tailgate.



SHUTDOWN

1. Move the packing lever to place the packer plate in the "home" position.
2. Put all controls in neutral.
3. Set parking brake.
4. Disengage PTO.
5. Shut off engine.
6. Shut off dashboard solenoid switch.
7. Remove key.
8. Lock truck.



GENERAL REPAIR PRACTICES

⚠ WARNING

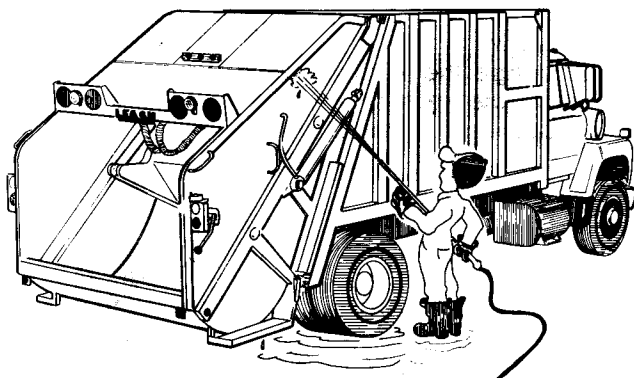
Proper service and repair is important for the safe, reliable operation of all mechanical products. The service procedures recommended and described in this service manual are effective methods for performing service operations. Some of these service operations require the use of tools specially designed for that purpose. These special tools should be used when and as recommended.

It is important to note that deviating from these procedures could cause damage to the unit or render it unsafe. However,

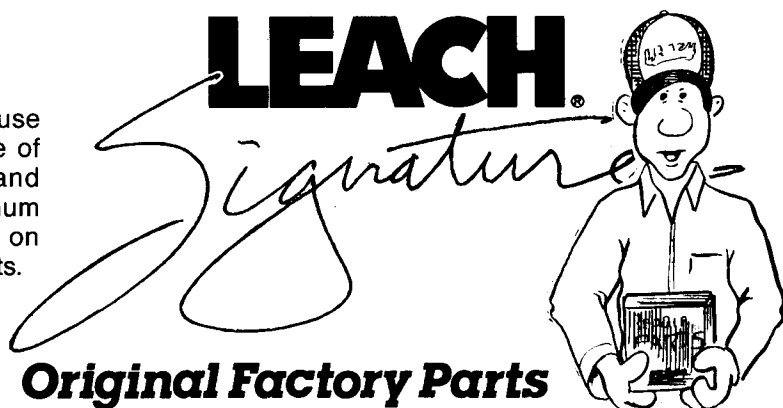
please remember that these procedures are not all inclusive. Since Leach Company could not possibly know, evaluate and advise the service trade of all possible ways in which service might be done or of the possible hazardous consequences of each way, we have not undertaken any such broad evaluation. Accordingly, anyone who uses a service procedure or tool which is not recommended by Leach Company must first thoroughly satisfy himself that neither his nor the operator's safety will be jeopardized by the service methods selected.

PREPARATION FOR SERVICE

Proper preparation is very important for efficient and safe service work. A clean work area at the start of each job will allow you to perform the repair as easily and quickly as possible, and reduce the incidence of misplaced tools and parts. If the portion of the unit to be repaired is excessively dirty, it should be cleaned before work starts. Cleaning will occasionally uncover trouble sources. Tools, instruments and parts needed for the job should be gathered before work is started. Interrupting a job to locate tools or parts is a needless delay. Special tools required for a job are listed in Section 11.

**REPLACEMENT PARTS**

Of growing concern to the Leach Company is the use of counterfeit, will-fit or substitute parts. The use of non-standard parts may affect the operation and performance, and void the warranty. Insure maximum reliability and protect your investment — insist on Leach Signature original factory replacement parts.



Original Factory Parts

SERVICE BULLETINS

In addition to the information given in this Service Manual, Service Bulletins are issued from time to time, which cover interim changes and supplementary information. Service Bulletins should be consulted for complete information on the unit covered by this manual. (Check with your local authorized LEACH Distributor.)



GENERAL REPAIR PRACTICES

**SAFETY PRECAUTIONS
PRIOR TO PERFORMING ANY
SERVICE OR REPAIR:**

1. Set the parking brake.
2. Put the vehicle in park, or if manual transmission put in gear and remove the ignition key.
3. Place a an OSHA approved chock block in front of and behind the front tires.
4. If steel bar supports are to be used to support the tailgate, place them as shown in Sec. 9, SERVICE AND REPAIR, under TAILGATE REPAIR.
5. When working on the unit always use the service tools listed in Sec. 11, SERVICE TOOLS if so directed by the instructions in Sec. 9, SERVICE AND REPAIR.
6. Whenever dismantling any hydraulic line, valve or cylinder be sure to turn off the hydraulic fluid flow, relieve the pressure, and slowly crack or loosen the fittings.

SAFETY DURING SERVICE AND REPAIR

1. Always wear safety glasses.
2. Disengage the PTO, turn off the ignition and remove the keys before:
 - a. Leaving the truck cab.
 - b. Examination or lubrication of the PTO, pump or drive shafts.
 - c. Entering the front of the body.
 - d. Entering the tailgate.
3. Always check to make sure the body access doors are locked shut before entering the cab.
4. Pump removal; due to the weight and location of the pump, it is advisable whenever possible to place a floor jack beneath the pump and apply a slight pressure, so that when the bolts are removed the pump is supported.
5. When it becomes necessary to raise the tailgate for maintenance or repair, do not enter the area beneath the tailgate unless the proper bracing has first been applied. All bracing and supports must be able to support 7500 lbs.
6. Never enter the body when load is under compaction pressure. Bring the packer plate to the "interrupted cycle" position and retract the pushout plate slightly.

**WELDING PRECAUTIONS
ELECTRIC WELDERS**

1. Electric arc welders should have a separate, fused disconnect circuit.
2. Welders must be used according to the manufacturers specifications.
3. All electric welding should be done in a well-ventilated stall.
4. The radiation given off by the arc will destroy the retina of the eye; so wear an approved welder's helmet or goggles.
5. Welding radiation will produce severe burns on unprotected skin, similar to sunburn, so wear heavy clothing. Use natural fiber or leather — avoid synthetic fiber clothing.

OXY-ACETYLENE TORCHES

1. Acetylene is a highly explosive gas which should be treated with the greatest care. At pressures above 15 psi, acetylene will explode by decomposition without the presence of air. No other industrial gas has such a wide explosive range.
2. Oxygen will spontaneously ignite in the presence of oil and grease. The hoses, torch handles, and

the regulators must be kept free of petroleum products.

3. Before using the equipment, inspect it for cleanliness and for leaks.
4. Hoses cannot be safely repaired: when they show signs of deterioration, they should be replaced.
5. Return regulators periodically to the distributor for inspection. Store gas bottles upright and out of the sun. Do not attempt to repair or make internal adjustments on the regulators yourself.
6. If you suspect a leak in the system, make a bubble test with Ivory soap. DO NOT USE ANY OTHER BRAND OF SOAP BECAUSE OF THE DANGER OF OXYGEN COMBINING WITH IT AND EXPLODING.
7. When preparing to use the torch, make certain that the regulator valves are all the way out to the "off" position before the main tank valves are opened to protect the regulators from the sudden impact of tank pressure.
8. When opening the tank valves, stand alongside of the regulators, out of the way, in case they blow out.
9. Backfiring or "machine gunning" at the torch is very dangerous and can lead to a major explosion.
10. Welding should be done in a location well away from flammable materials.

REMOVAL, DISASSEMBLY AND REPAIR:

1. Cleanliness is very important; dirt is the number one cause of wear in bearings, bushings and especially in hydraulic components.
2. Inspect hydraulic components for leaks before cleaning. The dirt build up on the component can aid in tracing fluid leaks.
3. Clean hydraulic connections before removal to prevent dirt from entering the component.
4. Loosen hydraulic fittings slowly to release pressure.
5. Cap hydraulic fittings immediately after removal to prevent dirt from entering the component or line and to prevent fluid from leaking out.
6. Clean the component in non-flammable solvent before disassembly.
7. Inspect component after cleaning for signs of wear or external damage.
8. When disassembling a component, note the position of each part as it is removed to aid in reassembly.
9. During disassembly note the condition of each part as it is removed to aid in diagnosing problems and to help prevent them in the future.
10. Clean and inspect disassembled parts for wear, cracks, dirt, etc.
11. After cleaning and inspection, re-usable hydraulic parts should be immediately coated with clean fresh hydraulic fluid to prevent rust formation. If these parts are not going to be reinstalled immediately, they should be wrapped in a clean lint-free cloth or paper to prevent nicks or scratches.
12. When repacking a cylinder, or resealing a valve, replace all seals and o-rings that are disturbed during the repair. The price of a few seals is very little compared to a return repair job.

REASSEMBLY AND INSTALLATION:

1. Assemble parts in the same position as removed.
2. Align parts accurately before mating.
3. Inspect o-ring and seal grooves for sharp edges, nicks or burrs before installing new sealing parts.
4. Lubricate all new sealing parts with clean, fresh hydraulic fluid before installation.
5. Use care not to damage new sealing parts on reassembly.

6. Use correct torque values when reassembling and installing components. See CAPSCREW MARKING AND TORQUE VALUES in this section.
7. Always check hydraulic fluid level in the hydraulic fluid tank after performing any service or repair of the hydraulic system.
8. Always lubricate components with grease fittings after they have been repaired and reinstalled.
9. Use only Leach Signature original factory replacement parts.

NOTE

See Section 9, SERVICE AND REPAIR for specific repair instructions

ELECTRICAL TESTING

The electrical system used on the Alpha consists of various lights, switches and wiring. Testing the components and wiring can be accomplished by two simple checks; CHECKING FOR VOLTAGE and CHECKING CONTINUITY.

CHECKING FOR VOLTAGE

A 12 volt test light is used to check for the presence of electricity in a live circuit. Connect the test light clip to a good ground and the probe at the point where the presence of voltage is to be checked. If voltage is present, the light will be on . . . if no voltage is present, the light will be off.

CHECKING CONTINUITY

A continuity tester is used to check the ability of a conductor to allow current to pass through it. A continuity tester uses a self contained power source, and should never be used on a live circuit. Connect the clip to one side of the component to be tested and touch the probe to the other side. If the component has the potential to pass current, has continuity, the light will be on . . . if the component is not able to pass current, there is no continuity and the light will be off.



GENERAL REPAIR PRACTICES

WELDING

- 1. When rewelding an old weld, be sure the old weld is completely cleaned out.
- 2. When repairing a cracked weld, the old weld should be completely removed before rewelding.
- 3. When adding a part or attachment be sure; the metal is clean before welding, the part is properly located and the weld will not cause damage to adjacent parts.
- 4. Use the following rods (rod-AWS number) for welding:
 - Body (except top hinge area)..... E6010, E6011, E6013
 - Top hinge area..... E11018, E7018
 - Tailgate..... E6010, E6011, E6013
 - Carrier plate..... E6010, E6011
 - Packer plate..... E11018, E7018

LIFTING INSTRUCTIONS

Because of the size and weight of some of the major components found on the Alpha, it is necessary to use suitable lifting devices for removal. The following components require lifting devices for removal: cylinders, carrier plate, packer plate, pushout plate and tailgate.

CAPACITY OF LIFTING DEVICE REQUIRED FOR REMOVAL

Cylinders	500 lbs.
Telescopic Pushout Cylinder	1000 lbs.
Carrier plate	1600 lbs.
Packer plate	1600 lbs.
Pushout plate	2800 lbs.
Tailgate.....	7500 lbs.

Nylon sling straps should be used for the removal of cylinders. The following specifications should be used to determine type of sling straps to use for lifting.

SLING STRAP SPECIFICATIONS






Type	USS-26-EN1
Rating	
Vertical lift	4800 lbs.
Choker lift	3600 lbs.
Basket lift.....	9600 lbs.
Width.....	2 in.
Length.....	depends on type of lifting device used

Chains should be used to lift and/or support the carrier and packer plates, pushout plate and tailgate. The following specifications should be used to determine the type of chain and hardware to use for lifting.

CHAIN AND HARDWARE SPECIFICATIONS

Chain	
Type	D.O.F. (Double Branch, Oblong Link, Foundry Hook)
Size	½ in.
Hammer locks	½ in.
Oblong rings.....	½ in.

CAPSCREW MARKING AND TORQUE VALUES

Usage	Much Used	Much Used	Used at Times	Used at Times
	To 1/2-69,000 To 3/4-64,000	To 3/4-120,000 To 1-115,000	To 5/8-140,000 To 3/4-133,000	150,000
Capscrew Diameter & Minimum Tensile Strength PSI	To 1-55,000			
Quality of Mat'l	Indeterminate	Min. Commercial	Med. Commercial	Best Commercial
SAE Grade Number	1 or 2	5	6 or 7	8
CAPSCREW HEAD MARKINGS Manufacturer's marks may vary. These are all SAE Grade 5 (3-line).				
    				
Capscrew Body Size (Inches) - (Thread)	Torque Ft-Lb (kg m)	Torque Ft-Lb (kg m)	Torque Ft-Lb (kg m)	Torque Ft-Lb (kg m)
1/4 - 20	5 (0.69)	8 (1.11)	10 (1.38)	12 (1.66)
- 28	(0.83)	10 (1.38)		14 (1.94)
5/16 - 18	11 (1.52)	17 (2.35)	19 (2.63)	24 (3.32)
- 24	13 (1.80)	19 (2.63)		27 (3.73)
3/8 - 16	18 (2.49)	31 (4.29)	34 (4.70)	44 (6.09)
- 24	20 (2.77)	35 (4.84)		49 (6.78)
7/16 - 14	28 (3.81)	49 (6.78)	55 (7.61)	70 (9.68)
- 20	30 (4.15)	55 (7.61)		78 (10.79)
1/2 - 13	39 (5.39)	75 (10.37)	85 (11.76)	105 (14.52)
- 20	41 (5.67)	85 (11.76)		120 (16.60)
9/16 - 12	51 (7.05)	110 (15.21)	120 (16.60)	155 (21.44)
- 18	55 (7.60)	120 (16.60)		170 (23.51)
5/8 - 11	83 (11.48)	150 (20.75)	167 (23.10)	210 (29.04)
- 18	95 (13.14)	170 (23.51)		240 (33.19)
3/4 - 10	105 (14.52)	270 (37.34)	280 (38.72)	375 (51.86)
- 16	115 (15.90)	295 (40.80)		420 (58.09)
7/8 - 9	160 (22.13)	395 (54.63)	440 (60.85)	605 (83.67)
- 14	175 (24.20)	435 (60.16)		675 (93.35)
1 - 8	235 (32.50)	590 (81.60)	660 (91.28)	910 (125.85)
- 14	250 (34.58)	660 (91.28)		990 (136.92)

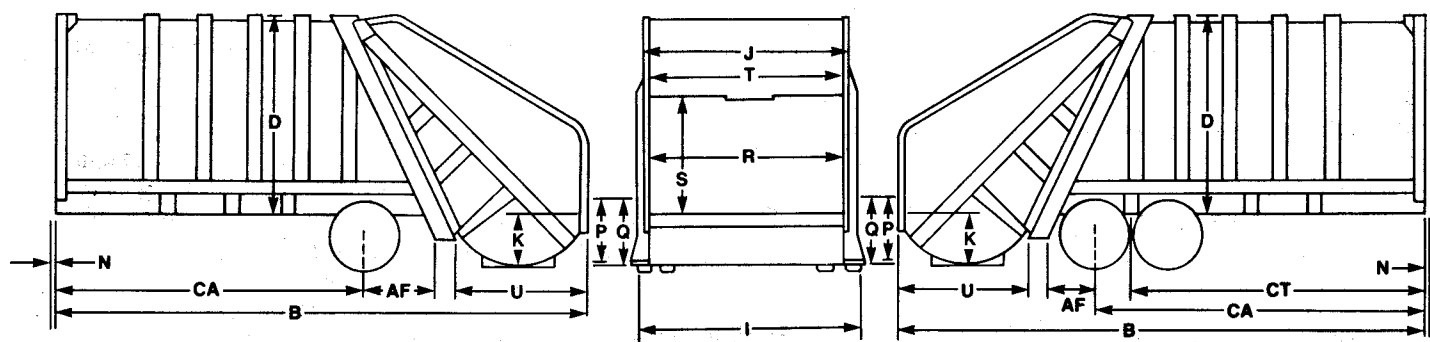
NOTES:

1. Always use the torque values listed above when specific torque values are not available.
2. The above is based on use of clean, dry threads.
3. Reduce torque by 10% when engine oil is used as a lubricant.
4. Reduce torque by 20% if new plated capscrews are used.
5. General Formula for calculating Torques is as follows: Torque in Inch Lbs. = .2 x Nominal Diameter of Screw x Loads in Ls., where Load = 80% of Yield Strength, expressed in Lbs., not pounds per square inch.



GENERAL REPAIR PRACTICES

GENERAL DIMENSIONS



*Alpha*TM

BODY DIMENSIONS	Single Axle					Tandem Axle			
	16 Yd.	18 Yd.	20 Yd.	12m ³	13m ³	16m ³	25 Yd.	19m ³	
AF After Frame	35"	35"	35"	889mm	889mm	889mm	24"	610mm	
B Overall Length	208"	221"	235"	5283mm	5613mm	5969mm	272"	6909mm	
CA To Centerline of Rear Axle	110"	123"	136"	2794mm	3124mm	3454mm	184"	4674mm	
CT To Centerline of Trunion (50" Beam)	—	—	—	—	—	—	159"	4039mm	
D Height Above Chassis Frame (with 3" sill)	90"	90"	90"	2286mm	2286mm	2286mm	90"	2286mm	
I Body—Outside Width	96"	96"	96"	2439mm	2439mm	2439mm	96"	2439mm	
J Body Inside Width	90"	90"	90"	2286mm	2286mm	2286mm	90"	2286mm	
K Hopper Depth	20"	20"	20"	508mm	508mm	508mm	20"	508mm	
N Interference Point Above Chassis Frame	3"	3"	3"	76mm	76mm	76mm	3"	76mm	
P Top of Step Below Chassis Frame	20"	20"	20"	508mm	508mm	508mm	20"	508mm	
Q Hopper Bottom Below Chassis Frame	22"	22"	22"	559mm	559mm	559mm	22"	559mm	
R Hopper Opening Width	84"	84"	84"	2134mm	2134mm	2134mm	84"	2134mm	
S Hopper Opening Height	53"	53"	53"	1346mm	1346mm	1346mm	53"	1346mm	
T Hopper Inside Width	84"	84"	84"	2134mm	2134mm	2134mm	84"	2134mm	
U Rear of Body to Rear of Tailgate Closed	58"	58"	58"	1473mm	1473mm	1473mm	58"	1473mm	
■ Height Above Chassis Frame (Tailgate Raised)	157"	157"	157"	3988mm	3988mm	3988mm	157"	3988mm	
■ Loading Lip Below Chassis Frame	1"	1"	1"	25mm	25mm	25mm	1"	25mm	
■ Center of Gravity Measured From Front of Body —Body Only	96"	104"	113"	2438mm	2642mm	2870mm	125"	3175mm	
—Pay Load	65"	73"	83"	1651mm	1854mm	2108mm	98"	2489mm	
■ Hopper Capacity	3.0 cu. yd.	3.0 cu. yd.	3.0 cu. yd.	2.3m	2.3m	2.3m	3.0 cu. yd.	2.3m	
■ Approx. Body Weight	10,225 lbs.	10,500 lbs.	10,770 lbs.	4638 Kg	4763 Kg	4885 Kg	11,530 lbs.	5230 Kg	
■ Min Truck GVWR Requirement	29,500 lbs.	31,000 lbs.	32,500 lbs.	13381 Kg	14062 Kg	14742 Kg	46,000 lbs.	20866 Kg	

NOTES: *Truck selected must be capable of carrying net weight of body plus weight of refuse to be collected.

*A full variable speed governor is preferred on trucks equipped with a diesel engine.

*CA must be usable with no obstructions protruding above frame.

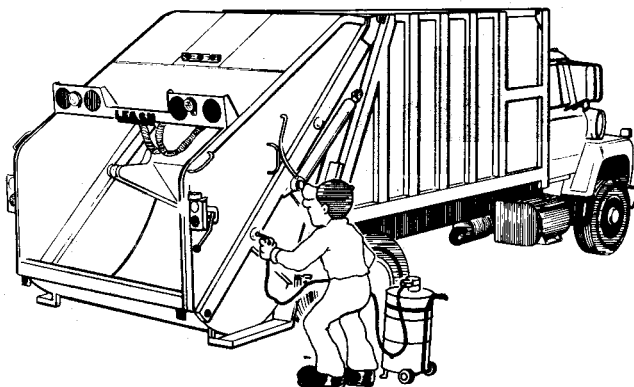
*Specifications subject to change without notice.



PREVENTIVE MAINTENANCE

GENERAL

The Alpha has been designed for long periods of efficient uninterrupted operation. Careful attention to proper preventive maintenance, as described in this section, will insure and extend trouble-free operation of the unit. Particular attention to correct lubrication of the unit and maintenance of the return line filter, are probably the two most vital areas of preventive maintenance required. The objective of preventive maintenance is to anticipate and prevent operational difficulties before they require extended shut down for costly repairs.

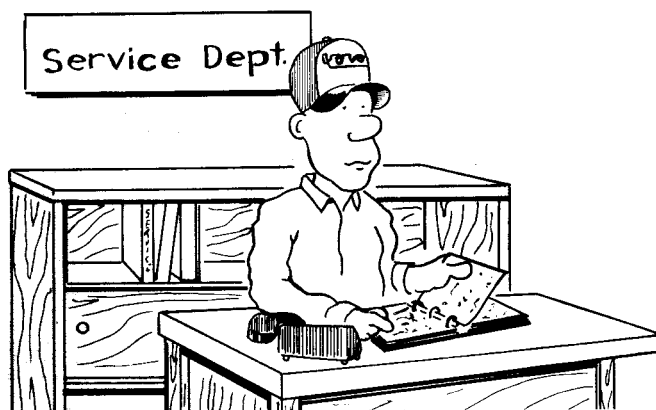


OPERATING AND MAINTENANCE RECORDS

Prepare and adhere to a maintenance schedule. Keep detailed records of all maintenance performed. Regularly inspect operating and maintenance records for deviations from normal operating conditions. Analyze the records for indications of potential trouble.

NOTE

Occasionally distributors will receive service bulletins from Leach Company concerning updated maintenance information. Keep those bulletins with this manual and make notes at the appropriate places in the manual referencing the updated information.



PREVENTIVE MAINTENANCE REQUIREMENTS

DAILY PREVENTIVE MAINTENANCE

Each day perform the following maintenance:

1. INSPECTION.

Perform the PRE-OPERATIONAL INSPECTION described in Sec. 3, OPERATION.

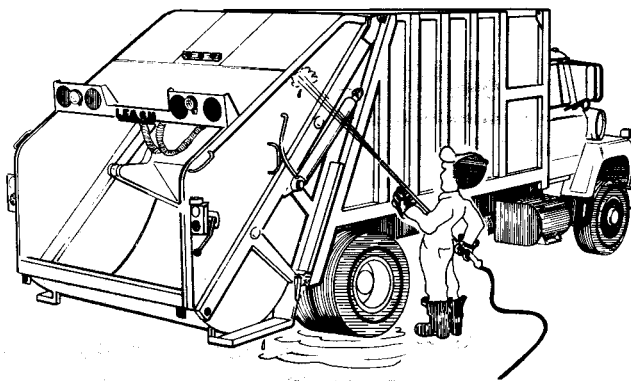
⚠ DANGER

Never go under the vehicle with the engine running. Death or serious injury could result.

- When checking for hydraulic leaks pay particular attention to hose fittings and connections at the cylinders and valves. A build-up of hydraulic fluid and dirt indicates a small leak that can probably be corrected by tightening the fitting or connection.
- Check the visual indicator to determine the condition of the return line filter element.
- Check all major moving parts for smoothness and ease of operation.

2. CLEANING.

Hose entire unit inside and out with clean water. Make sure no refuse is lodged in the body trough or behind the pushout plate especially near the clamp area or rear of the tank. Make sure there is no grease on the pushout bar.



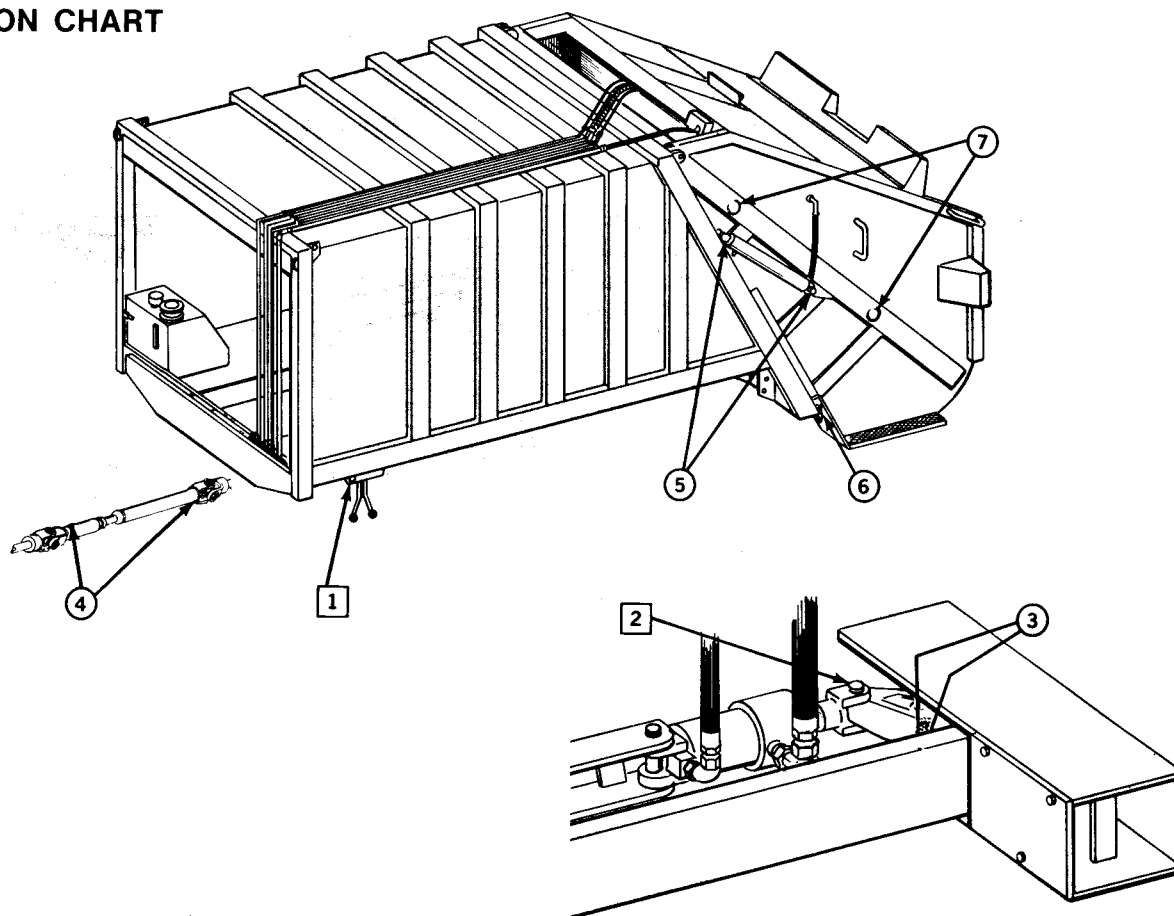
3. LUBRICATION.

Frequent inspection of grease points will indicate when lubrication is needed.



PREVENTIVE MAINTENANCE

LUBRICATION CHART



INSTRUCTIONS

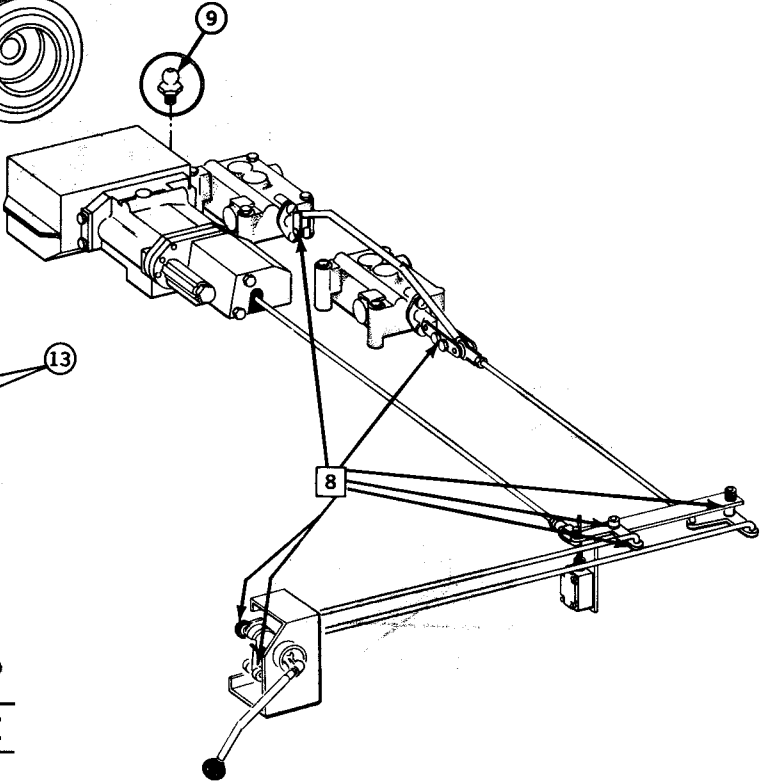
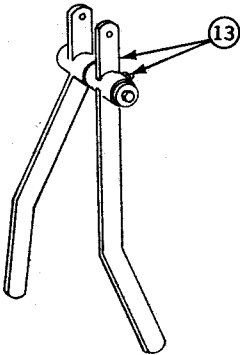
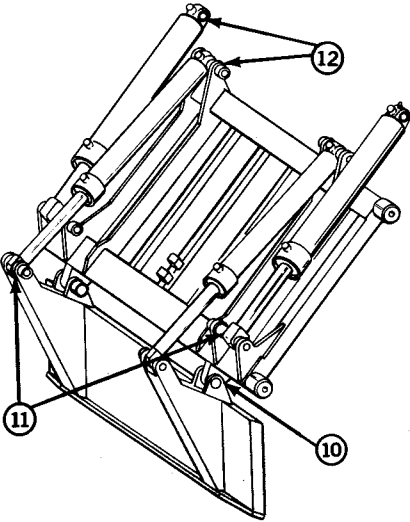
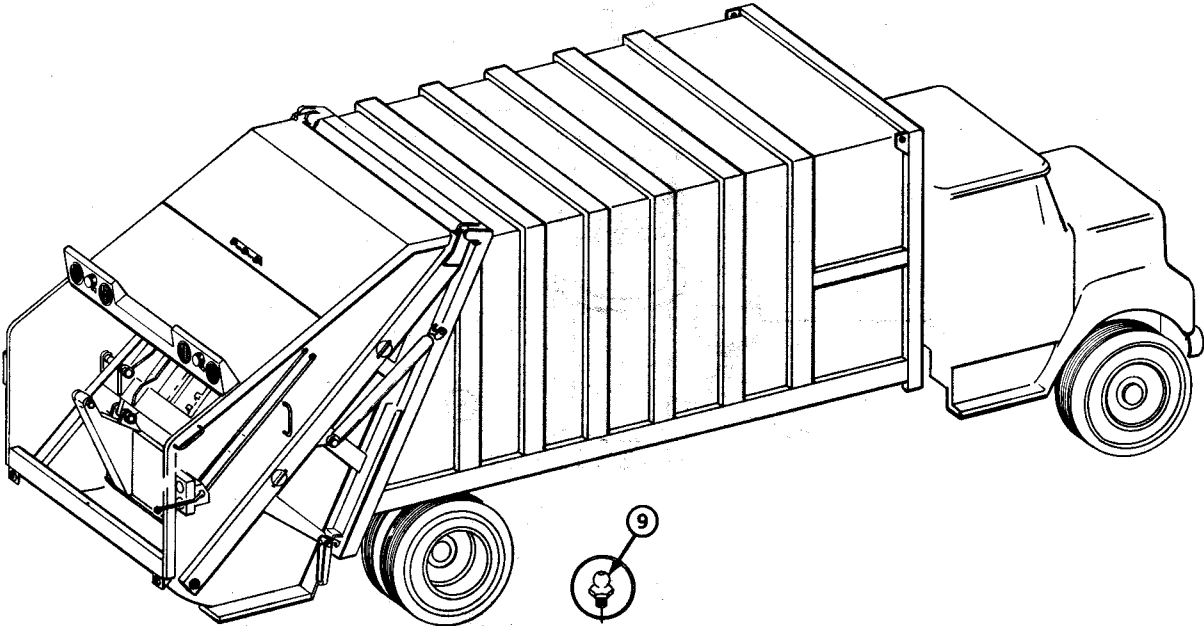
- Grease weekly (every 40 hrs. of operation) with MOBILUX EPI-SERVICE grease or equivalent.
- Oil weekly (every 40 hrs. of operation) with SAE #10 or equivalent.

CAUTION

In below freezing climates all grease and oils should have a cold test rating of at least -20°F.

ILLUS. #	LUBE POINT	QTY.	NOTE
■1	Control levers	2	
■2	Clamp cylinder	2	
●3	Clamp mechanism	2	
●4	PTO shaft	2	
●5	Tailgate lift cylinders (top & bottom)	4	
●6	Tailgate clamps	2	
●7	Rollers	4	1 & 2

LUBRICATION CHART



ILLUS.	#LUBE POINT	QTY.	NOTE
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NOTE

The packer plate must be in the home position to lubricate the following lube points.

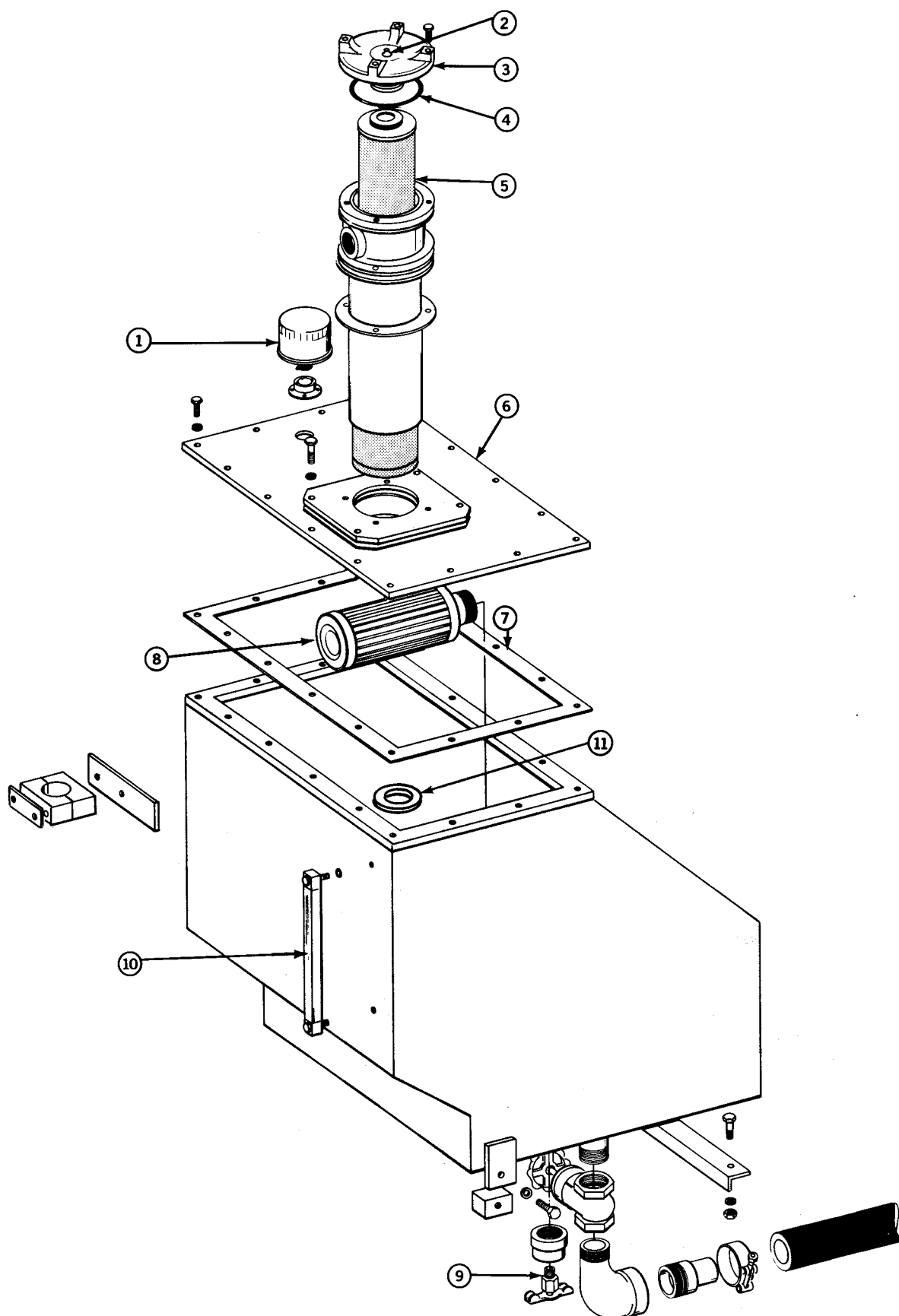
■8	Packing lever control linkage	10	3
●9	Main Operating Valve	1	3
●10	Packer plate pivot	2	
●11	Operating cylinder rod ends	4	
●12	Operating cylinder case ends	4	3
●13	Optional control levers	2	

NOTES:

1. Move roller track access covers to grease roller.
2. Rollers need lubrication — roller tracks do not! Grease on tracks will only cause rollers to slide, keep tracks clean and dry.
3. Remove top covers for access to lube points.



PREVENTIVE MAINTENANCE



PREVENTIVE MAINTENANCE

HYDRAULIC SYSTEM SERVICE

(See accompanying hydraulic system illustration)

Proper maintenance of the hydraulic components is of vital importance to the service life of the system and the operation of the unit as a whole.

CHECKING FLUID LEVEL (DAILY)

Place the carrier plate in the "home" position and the packer plate in the open position, fully retract the pushout cylinder to check the fluid level. When checking the fluid level in the hydraulic tank, also note any frequent or sudden loss of fluid. This would indicate leakage, which must be traced and corrected to avert equipment failure and possible damage to components.

If low, fill the hydraulic tank to the "NORMAL FILL LEVEL" with hydraulic fluid as specified in Sec. 5, SPECIFICATIONS according to operating and weather conditions.

CLEAN TANK BREATHER (WEEKLY)

Clean the air breather (1) every week. Replace a breather than can not be cleaned adequately.

LUBRICATION POINTS (WEEKLY)

Every week (every 40 hours of operation) lubricate the unit as shown on the LUBRICATION CHART in this section.

CHECK/REPLACE RETURN LINE FILTER ELEMENT

The return line filter is a vital component of the hydraulic system. Without proper filtration problems are bound to occur among the hydraulic system components. Stick to a strict maintenance schedule for this item.

Time Lapse Recommendations for Element Replacement:

1. After the first 20-hours of hydraulic pump operation.
2. After the next 50-hours of hydraulic pump operation.
3. Thereafter, every 250-hours of hydraulic pump operation or sooner, if so indicated by the filter replacement indicator (2).

The condition of the filter element must be checked weekly by looking at the visual indicator on the filter. Refer to item (2) of the tank illustration.

REPLACEMENT OF FILTER ELEMENT

(See Hydraulic System Service Illustration)

1. Remove filter cover (3).
2. Remove o-ring (4).
3. Remove element (5) and discard.
4. Install a new element (5).
5. Coat a new o-ring (4) with fresh hydraulic fluid and install in filter cover (3).
6. Install the cover and secure to the bowl with the attaching hardware.
7. Check the fluid level and replenish with fresh fluid as described earlier in this section under CHECKING FLUID LEVEL.

CAUTION

Extended operation of the unit without proper filtration will result in reduced service life of hydraulic system components.

CLEANING HYDRAULIC STRAINER (MONTHLY)

1. Remove cover (6) and gasket (7).
2. Unscrew strainer (8).
3. Clean strainer thoroughly in a suitable cleaning solvent.
4. Reinstall strainer (8).
5. Remove, clean, reinsert magnetic ring (11).
6. Inspect the gasket (7) and replace with a new one if necessary.
7. Align the gasket carefully and secure the cover to the tank with the attaching hardware.

FLUSHING HYDRAULIC SYSTEM (YEARLY)

1. Drain all fluid from the hydraulic tank into a suitable container by opening drain (9).
2. Remove the cover (6).
3. Wipe off the magnetic ring, and wipe out the bottom of the tank (11).
4. Clean the strainer as described above.
5. Reinstall the cover as described above.
6. Fill the hydraulic tank with fresh fluid as specified in Sec. 5, SPECIFICATIONS according to operating and weather conditions.
7. Start the unit and operate all hydraulic levers as described in Sec. 3, OPERATION. Leave all hydraulic cylinders in the retracted position and shut down the unit.
8. Recheck the fluid level and add fluid as necessary to bring the level to the "NORMAL FILL LEVEL" on the sight gauge (10).

NOTE

Refer to Sec. 9, SERVICE & REPAIR for detailed instructions pertaining to those items requiring repair or replacement.



PREVENTIVE MAINTENANCE

HYDRAULIC SYSTEM SERVICE

CONTAMINATION

It is estimated that as much as 90% of all hydraulic problems may be traced directly to the fluid. It is of utmost importance that all foreign matter be kept from the hydraulic fluid. Invisible quantities of abrasive type contamination may cause serious pump wear, malfunctioning of pumps and valves, and sludge accumulations within the system in relatively short periods of time. It is also essential that moisture and water be kept from the hydraulic fluid and system.

COMMERCIAL HYDRAULIC FLUID TESTING

Hydraulic fluid samples should be taken periodically for laboratory analysis. The actual sampling method is critical. It should be done based on ANSI Standard B93.19M(R1980). This standard is available from the National Fluid Power Association, 3333 N. Mayfair Rd., Milwaukee, WI 53222.

Samples should be taken from the center of the reservoir when the fluid is at operating temperature and placed in a clean, dry, glass bottle with a non-shedding, screw-on cap. The bottle should be labeled with the date, type of fluid, and model and serial number of the machine.

Two identical samples should be taken. One for laboratory analysis and one for your own preliminary analysis while you are waiting for the lab report.

We recommend the use of commercial laboratory services for analysis of routine fluid samples taken on a regularly scheduled basis. The cost is about \$20 to \$30 per sample. The most important analyses are particle count, Spectro-chemical analysis, water content, and viscosity.

IN HOUSE HYDRAULIC FLUID TESTING

After your sample has been allowed to stand for 20 to 30 minutes to eliminate all air bubbles, hold the bottle up to the light to check for debris in the fluid and to check whether the fluid is clear or cloudy.

Any visible debris is an indication of a severe solid contamination problem, the source of which must be located and corrected immediately. Common sources of this kind of contamination may be component wear, unsealed reservoir covers, or dirty air breather filters.

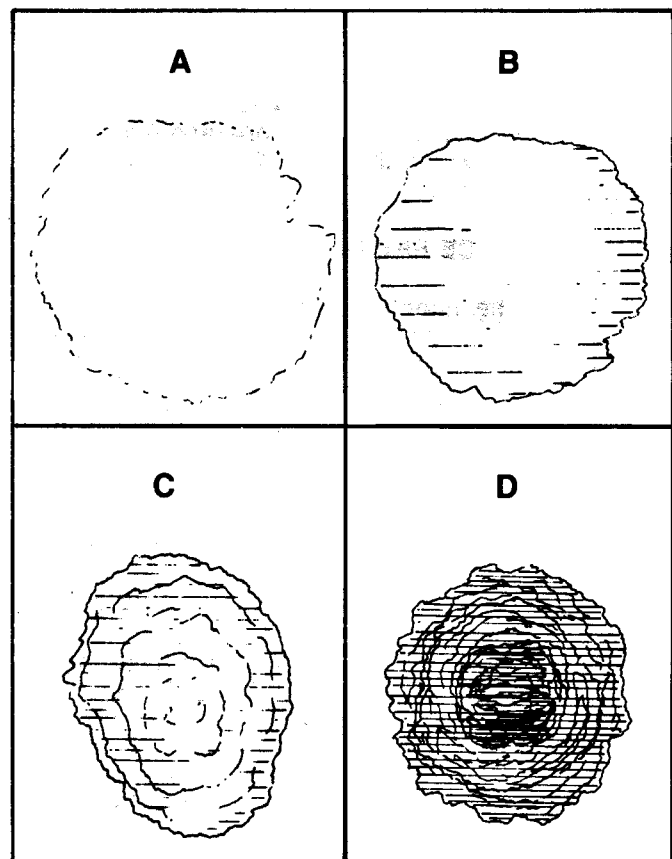
If the sample is the least bit "cloudy" it is an indication of water contamination, the source of which must be found and eliminated immediately. Common sources are inadequate outdoor storage, unsealed reservoir covers, or condensation.

A "BLOTTER SPOT TEST" may also be performed to test for OXIDATION. Place a DROP of fluid on a piece of white blotter paper. Order Leach part number 102480 for 20 sheets.

NOTE:

The Blotter Test will provide an indication that a more complete test may be necessary.

- If the blotter remains colorless or develops only a light yellow ring, oxidation is under control (A).
- If color develops but is uniform throughout, the fluid is still serviceable but should be checked for correct additive content (B).
- If the sample shows distinct rings the fluid should be changed (C).
- If a distinct dark spot remains in the middle, but a lighter colored fluid migrates outward in the blotter paper the fluid is about to dump (or already has) sludge or other by-products into the system. The time for replacement of this fluid has already passed (D).



Kits are available from your fluid supplier to test for acid content in much the same way you would test the condition of swimming pool water. A shift in acid content may indicate a breakdown in the fluid.

KEEP ACCURATE, DATED RECORDS OF ALL INFORMATION GAINED FROM THESE TESTS.

PREVENTIVE MAINTENANCE

WEEKLY PREVENTIVE MAINTENANCE

1. CLEANING.

Clean and paint exposed metal surfaces to remove and prevent the formation of rust.

2. INSPECTION.

a. In addition to the body mounting hardware, which is checked daily, inspect all other accessible mounting hardware and fittings for tightness. Refer to the CAPSCREW MARKING AND TORQUE VALUE CHART provided in Sec. 4, GENERAL REPAIR PRACTICES.

b. Check electrical wiring and insulation for frays, breaks and loose connections.

3. LUBRICATION.

Refer to the LUBRICATION CHART in this section and service those listed items which require weekly lubrication.

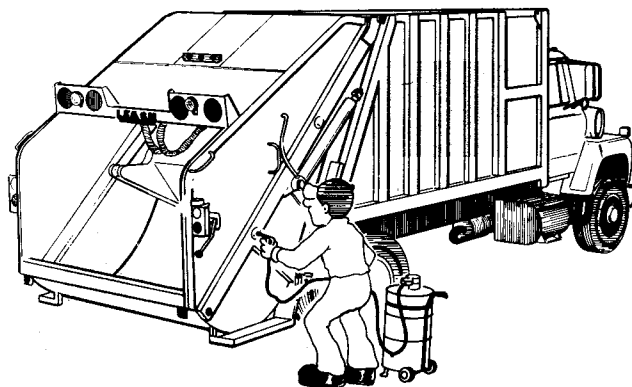
4. HYDRAULIC SYSTEM.

a. The return line filter element is vital to the service life of the hydraulic system. Check the replacement indicator on the filter assembly weekly. Refer to HYDRAULIC SYSTEM SERVICE earlier in this section for more detailed information about this important item.

b. Check the breather cap on the hydraulic tank. Clean it weekly and replace it if it cannot be cleaned thoroughly or is missing.

5. CHECK-OUT PROCEDURES.

Each week perform the CHECK-OUT PROCEDURES listed in Sec. 7 of this manual.

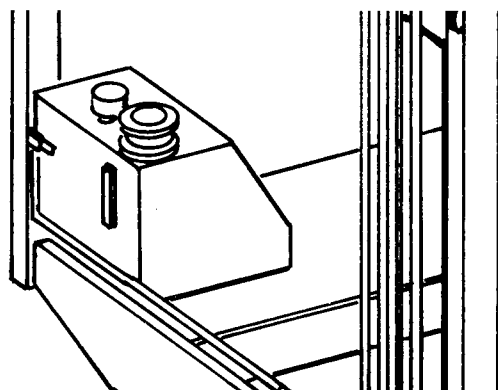


MONTHLY PREVENTIVE MAINTENANCE

HYDRAULIC SYSTEM

a. Once a month, remove and clean the hydraulic tank fluid strainer as described in HYDRAULIC SYSTEM SERVICE in this section.

b. Each month check the tailgate lift cylinder air breather, if plugged, replace it with a new breather.



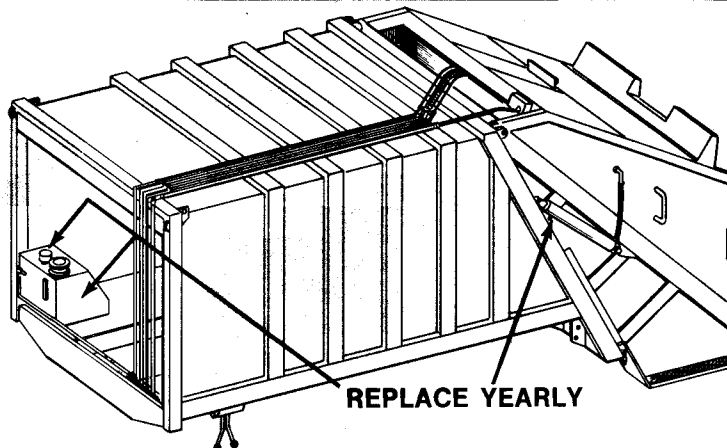
YEARLY PREVENTIVE MAINTENANCE

HYDRAULIC SYSTEM

a. Once a year drain, flush and refill the hydraulic tank as described under HYDRAULIC SYSTEM SERVICE in this section.

b. Once a year replace the hydraulic tank air breather.

c. Once a year replace the fibrous tailgate lift cylinder air breathers.



SECTION 6

PREVENTIVE MAINTENANCE

GENERAL

The Alpha has been designed to provide long periods of trouble-free operation. Performing the check-out procedures below, at regular weekly intervals, will help to prevent unscheduled downtime.

⚠ WARNING

Make sure you know and observe all safety precautions listed in Sec. 2 before performing any of the following check-out procedures. Use extreme caution to avoid coming near any moving parts. Never enter the body of the unit when the truck is running. Make sure the unit is in the correct operational mode as indicated by the **OPERATIONAL STATUS** block presented at the beginning of each check.

NOTE

Because of the location of various controls, some checks will require two people.

CHECK HYDRAULIC TANK FLUID LEVEL

1. Make sure tailgate is down and clamped securely.
2. Position the carrier plate in the "home" position and the packer plate in the "open" position.
3. Pull the pushout lever to position the cylinder in the retract position.
4. Fluid level should be between the safe range marks on the sight gauge.

IF NOT:

Operational Status			
Truck	Off	PTO	Disengaged

5. Add hydraulic fluid for normal operating and weather conditions. See Sec. 6, **PREVENTIVE MAINTENANCE** for additional information about servicing the hydraulic system.

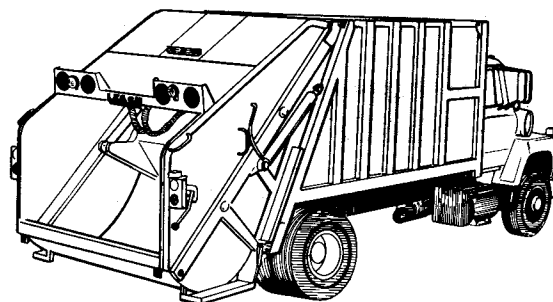
CHECK ENGINE SOLENOID SWITCH

Operational Status			
Truck	Running	PTO	Engaged
		Sol. Sw.	ON

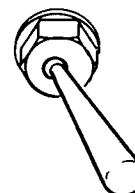
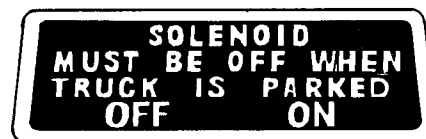
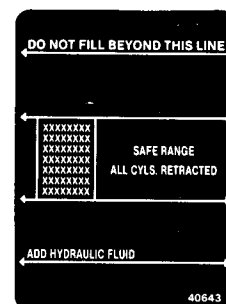
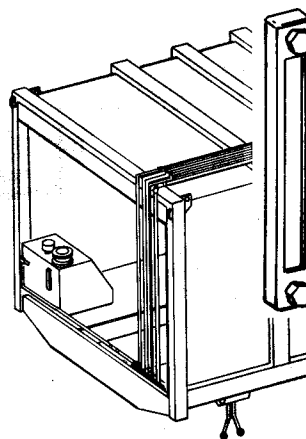
IF ENGINE SPEEDS UP:

Operational Status		
Truck Off	PTO Disengaged	Keys Removed

The system is grounded. Shut off the engine and remove the keys. Locate the short and repair as described under **ELECTRICAL SYSTEM** in Sec. 9, **SERVICE AND REPAIR**.

**⚠ CAUTION**

If the unit being worked on has an optional system such as telescopic pushout circuit, it is important to refer to Section 10, for specific instructions concerning those items. For example, when performing the check-out procedures listed in Sec. 7, refer to Sec. 10 to see what different or additional procedures must be followed for an optional item.



CHECK-OUT

CHECK ENGINE SPEED-UP SWITCHES

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. ON

1. Depress engine speed-up pushbutton. The engine should speed up.

IF NOT:

Operational Status			
Truck	Off	PTO	Disengaged

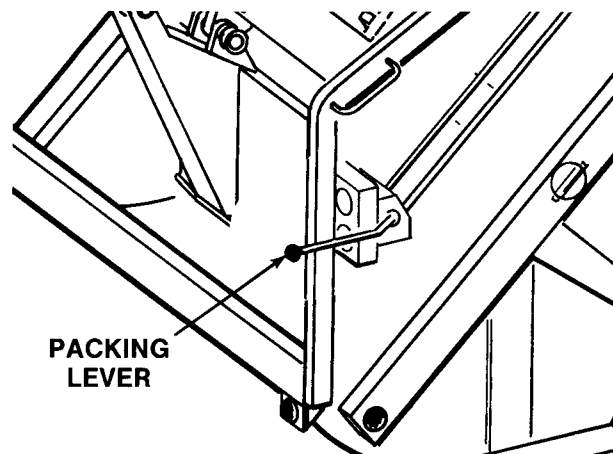
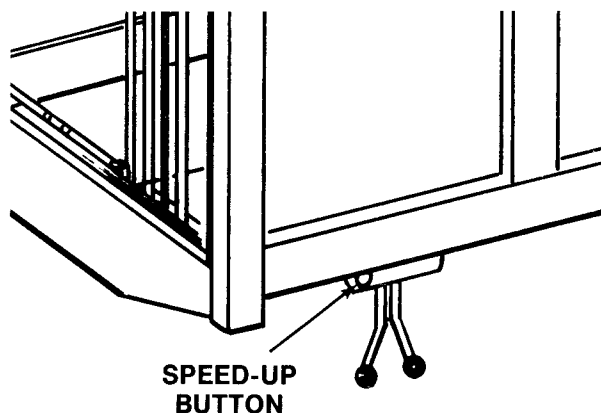
Locate the fault in the wiring or switch and repair. See Sec. 9, SERVICE AND REPAIR — ELECTRICAL SYSTEM.

2. Activate packing lever. The engine should speed up.

IF NOT:

Operational Status			
Truck	Off	PTO	Disengaged

Locate the fault in the wiring or switch and repair. See Sec. 9, SERVICE AND REPAIR — ELECTRICAL SYSTEM.



CHECK PACKING CYCLE TIME

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. ON

1. Activate the packing lever and using a stop-watch, time a complete cycle. A complete cycle should take 26-28 seconds.

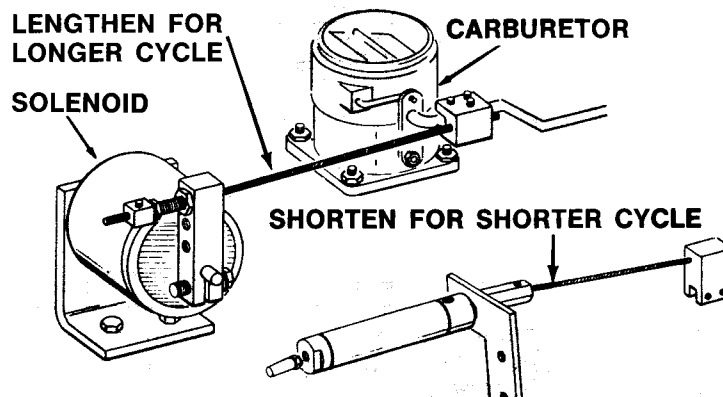
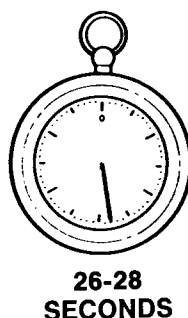
IF NOT:

Operational Status			
Truck	Off	Keys	Removed

2. Adjust cable length between solenoid and carburetor as needed to obtain correct cycle time.

NOTE

It is important that the cycle time is correct prior to making pressure checks.



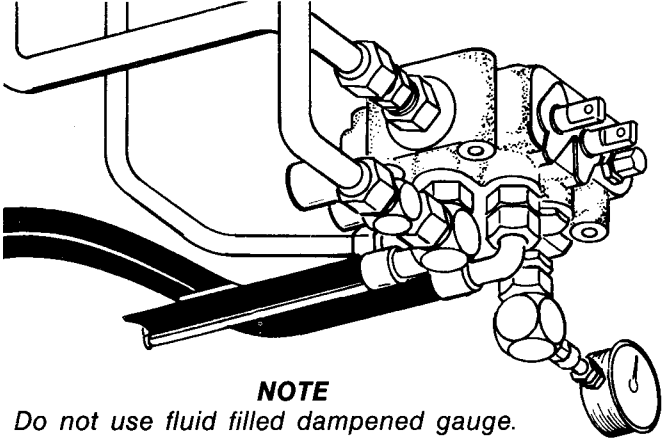
SECTION 7 CHECK-OUT

CHECK PRESSURES

The pressure checks provided below will indicate the operating condition of the hydraulic system. Detailed adjustment procedures are provided later in this section and are referenced at the appropriate check-out procedure. Prior to performing pressure checks:

Operational Status			
Truck	Off	Keys	Removed

- 1. Install a 0-2000 PSI gauge as shown.
- 2. Start the unit, engage the PTO and turn the solenoid switch on.
- 3. Perform the following checks in order.



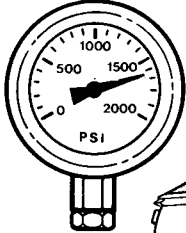
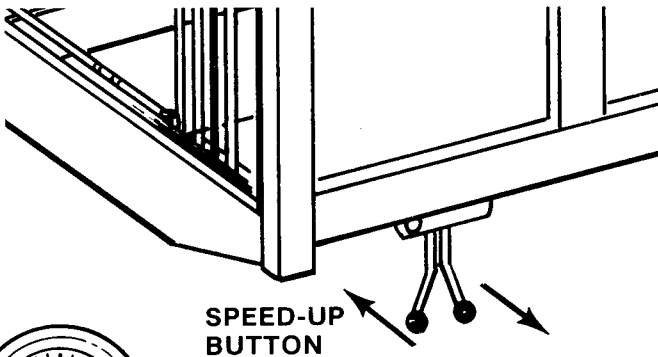
CHECK MAIN RELIEF PRESSURE

Operational Status				
Truck	Running	PTO	Engaged	Sol. On Sw.

- 1. Depress the speed-up button.
- 2. Move the pushout control lever to fully extend the pushout cylinder
- 3. Hold the lever and read the gauge. The pressure should be 1650 PSI.

NOTE

On units with the telescopic pushout option, see Section 10.

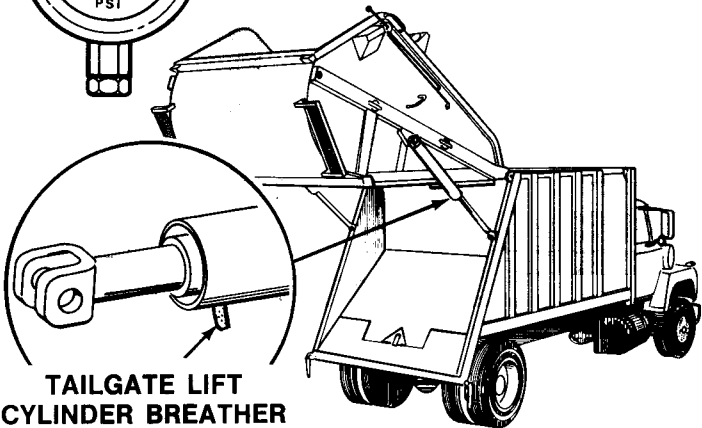


PUSHOUT LEVER
TAILGATE LIFT LEVER

IF NOT:

Operational Status				
Truck	Running	PTO	Engaged	Sol. On Sw.

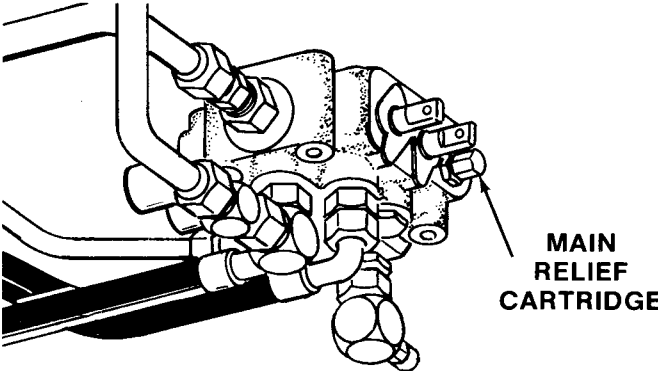
- 4. Release the tailgate clamps and raise the tailgate to the upmost position.
- 5. Depress the speed-up button, hold the tailgate lift lever and read the gauge. Pressure should be 1650 PSI with no steady fluid flow from tailgate lift cylinder breathers. If fluid flows from the tailgate lift cylinder breather, replace the leaking cylinder u-cup as described in Sec. 9, SERVICE AND REPAIR.



IF NOT:

Operational Status				
Truck	Running	PTO	Engaged	Sol. On Sw.

- 6. Increase the pressure by adjusting the main relief cartridge of the 2-SPOOL DIRECTIONAL VALVE as described in Sec. 9, SERVICE AND REPAIR.
- 7. Repeat steps 4 and 5 and check the gauge for 1650 PSI.



IF NOT:



SECTION 7

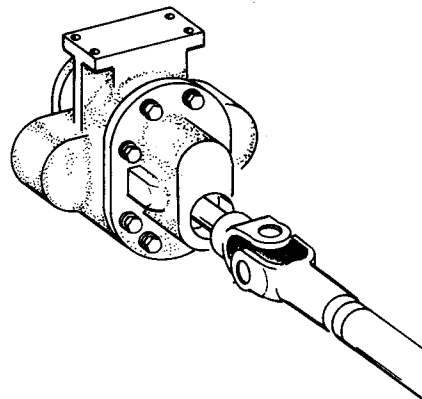
CHECK-OUT

IF NOT:

- Replace defective HYDRAULIC PUMP as described in Sec. 9, SERVICE AND REPAIR.

Operational Status			
Truck	Off	Keys	Removed

- Readjust the main relief pressure to approximately 1650 PSI.



CHECK REVERSING PRESSURE

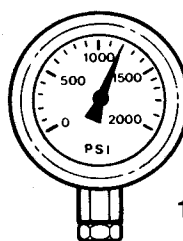
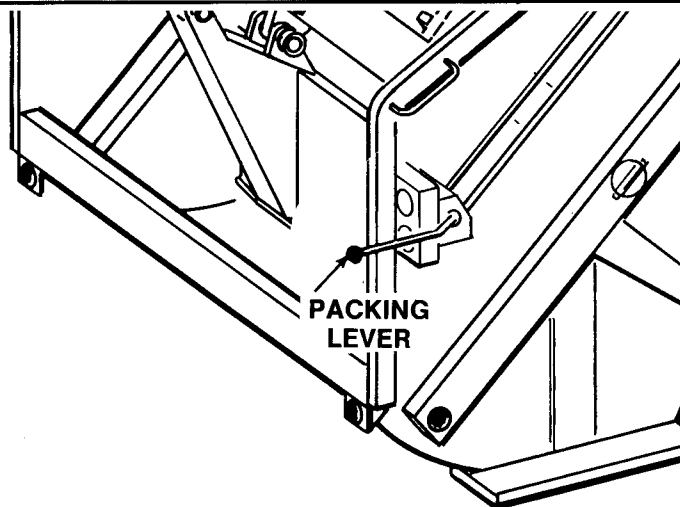
Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

- Shift packing lever and cycle the unit.
- Read the gauge as the main operating valve reverses (shifts flow from packer plate cylinders to carrier plate cylinders). Pressure should be 1200 PSI.

IF NOT:

Operational Status			
Truck	Off	Keys	Removed

- Check the reversing spring in the main operating valve as described in the MAIN OPERATING VALVE Section 8, Troubleshooting.



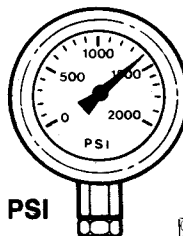
1200 PSI

CHECK KNOCKOUT PRESSURE

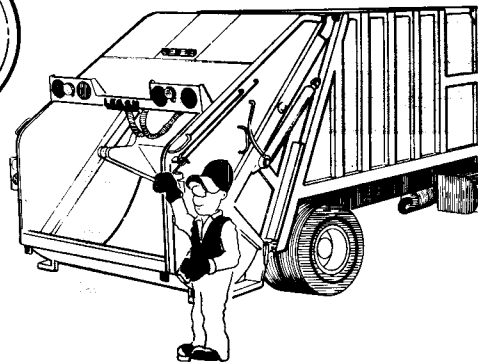
Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

- Shift the packing lever and cycle the unit.
- Read the gauge as pressure peaks just before the cycle stops. The pressure should be 1400 PSI.

IF NOT:



1400 PSI



Operational Status			
Truck	Off	Keys	Removed

- Check knock out spring operation as described in the MAIN OPERATING VALVE Section 8, Troubleshooting.

CHECK SEQUENCE VALVE PRESSURE

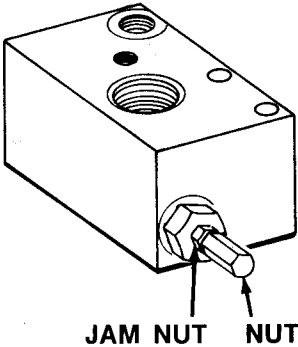
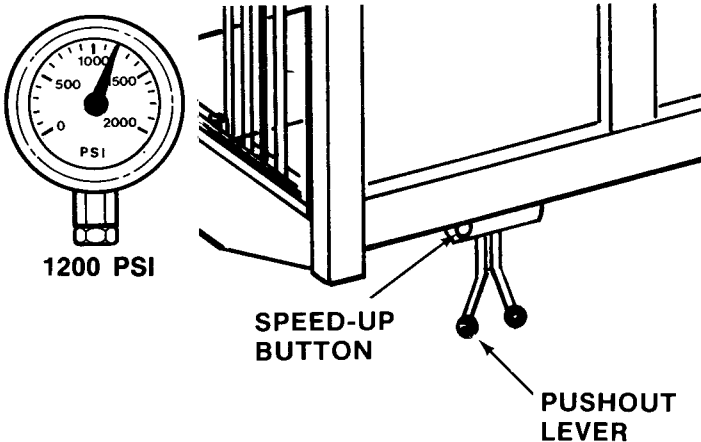
Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

- Depress speed-up button.
- Move the pushout control lever to extend the pushout cylinder.
- Read the gauge just as the pushout cylinder begins extending. The pressure should be 1200 PSI.

IF NOT:

Operational Status			
Truck	Off	Keys	Removed

- Correct pressure by:
 - Removing nut.
 - Loosening jam nut.
 - Adjusting setscrew in to increase pressure or out to decrease pressure.
- Repeat steps 1 thru 4 until the pressure is correct.



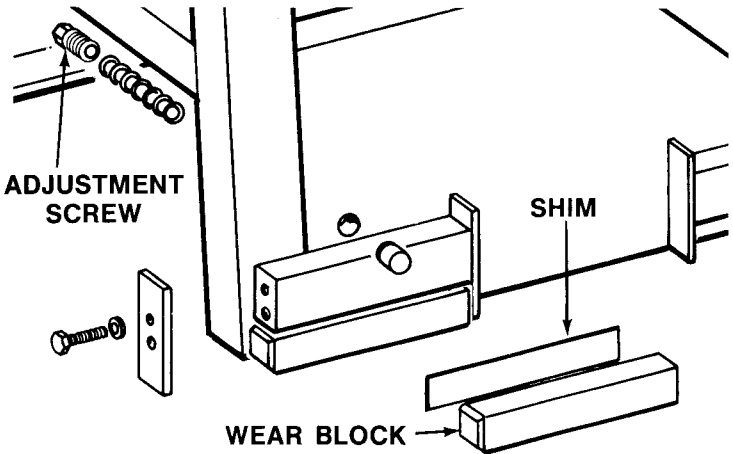
CHECK FRICTION BRAKE (CLAMP)

- The body must be empty before checking the friction brake.
- The pushout plate should not move freely on its own when stopping or starting the truck. It should be held in position by the friction brake.

IF NOT:

Operational Status			
Truck	Off	Keys	Removed

- Turn in the adjusting screw until the pushout plate does not move when starting or stopping the truck. The adjustment screw can be turned in until a socket will no longer grasp the screw head. In which case shims or a new block must be installed as described in Sec. 9, SERVICE AND REPAIR under PUSHOUT PLATE.



CHECK-OUT

CHECK CLAMP MECHANISM

Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	ON
-------	---------	-----	---------	----------	----

1. With the unit partially loaded push the pushout control lever inward and hold.
2. Observe the clamp action, the pushout bar should not slip through the clamp mechanism.
3. Also observe that the clamp lever does not move when the control lever is returned to neutral.

IF NOT:

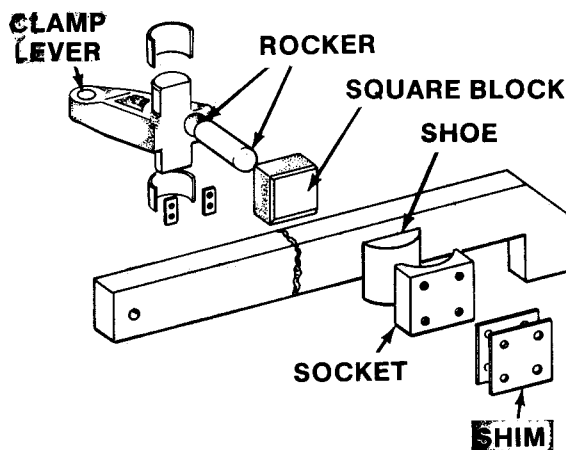
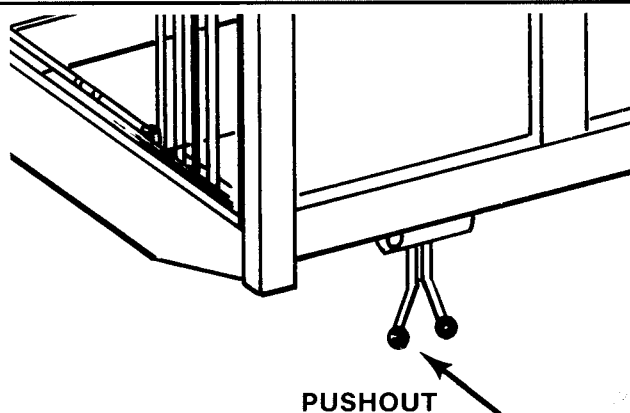
Operational Status

Truck	Off	Keys	Removed	Body	Empty
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4. If slippage is occurring check for wear on the items shown.

Parts wear, if not excessive, can be compensated for by adding shims (available from your Leach distributor). See Sec. 9, SERVICE AND REPAIR, Clamp Mechanism.

5. If the clamp lever travels to an over-center position (beyond parallel with the pushout base) it is also an indication of worn parts. Add shims behind the stationary block or replace the half bearings, rocker or moving block to eliminate the over-center travel.

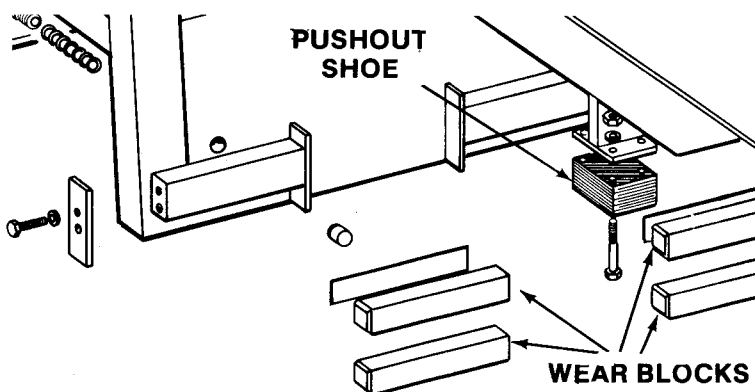


CHECK PUSHOUT SHOES AND WEAR BLOCKS

Operational Status

Truck	Off	Keys	Removed
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1. Visually inspect all pushout shoes and wear blocks for excessive wear. These items **must** be replaced before there is metal to metal contact.
2. Shim or replace worn parts as described in Sec. 9, SERVICE AND REPAIR under PUSHOUT PLATE.

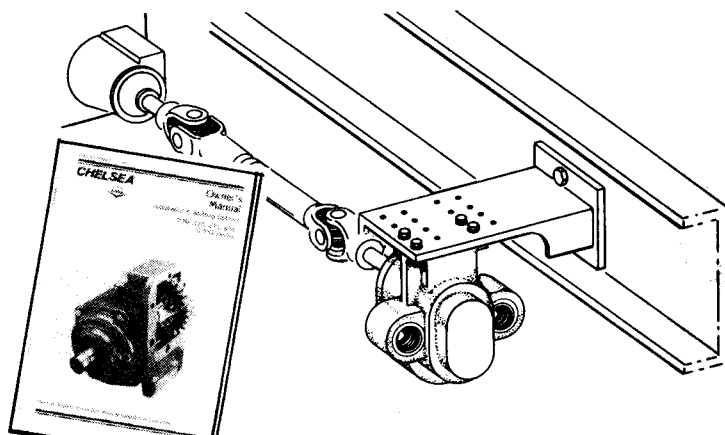


POWER TAKE OFF (P.T.O.)

Operational Status

Truck	Off	Keys	Removed
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1. Periodically re-torque the mounting bolts or studs as outlined in the P.T.O. manufacturers service manual.



TROUBLESHOOTING

GENERAL

Troubleshooting is a matter of quickly and logically isolating the cause of a problem and taking corrective action. Factory trained mechanics, experienced operators, a thorough understanding of the information in this manual and accurate maintenance records are the best troubleshooting tools available. Occasionally it may be best for a service person, who is trying to isolate a problem, to go "on the route" or consult with the operators to determine how the unit is acting under actual working conditions.

For the most part, problems with the unit will be limited to hydraulic and electrical system component malfunctions or control linkage adjustment.

Hydraulic flow diagrams are provided in this section. These diagrams can be helpful in determining which parts are associated with a particular function. For example, the clamp cylinder is part of the load pushout function.

An electrical wiring diagram is included in Sec. 9, **SERVICE AND REPAIR** under **ELECTRICAL SYSTEM**.

Problems in the hydraulic system may be found by performing the **PRESSURE CHECKS** found in Sec. 7, **CHECK-OUT PROCEDURES**. Refer to Section 10 for telescopic troubleshooting.

COMPACTION

Before troubleshooting a unit it is important to remember that the compaction may vary with the following conditions.

1. Type of refuse. Tree branches, dry leaves, furniture, and any other items loaded into the body which take up relatively large amounts of space will reduce the compaction ratio.
2. Moisture content of refuse. Wet refuse will pack tighter than dry and consequently a wet load will weigh more than a dry load. Wet refuse loaded into the body will increase the compaction rate.
3. Operation of the equipment. As with the operation of any type of heavy equipment, one machine can yield different results with different operators. Operating a rear loader is a skill. Placement of items in the hopper, not over loading the hopper, and releasing the pushout plate clamp at the right time are all learned skills that will affect the compaction rate of a unit.

4. Preventative maintenance. A properly maintained unit will achieve higher compaction rates than one that is poorly maintained. The condition of the hydraulic system, pump, main relief setting, and the condition of the operating cylinder seals will all have an effect on unit performance and compaction. Some chassis components will also affect compaction. The engine speed during packing, fluid level in an automatic transmission, and the condition of the clutch assembly in a standard transmission chassis may also affect compaction.

Compaction rates of a unit will depend on the season, the type of trash, the weather, and the operation and maintenance of a unit. If the unit packs relatively consistent loads and has been properly maintained according to the Service manual then it is safe to assume that it is getting maximum compaction for your particular conditions.



TROUBLESHOOTING

DIESELING IN HYDRAULIC SYSTEMS

Any hydraulic system should be a sealed environment free of foreign material including air. Unlike solid contamination, air is compressible and contains oxygen. It is these two (2) properties of air contamination that provide the elements needed to support the phenomenon known as dieseling. Dieseling can only occur when the elements of fuel, oxygen, and heat are all present at the same time. In the hydraulic system the hydraulic fluid is the fuel. The presence of air provides not only the oxygen to support combustion but also the means for generating sufficient heat to ignite the fuel/air mixture. When air is rapidly compressed, heat is generated. A rapid pressure change of only 600 psi may be enough to generate the heat required to ignite the fluid and air mixture. The oxygen in the heated compressed air and the hydraulic fluid ignite resulting in dieseling. The ignitions that result from dieseling in the hydraulic system are small in size and many may be needed to eventually damage a piston seal to the extent that bypass will occur.

"Where does the air come from?" The answer is that the air comes out of the fluid itself. Hydraulic fluid can contain 10% air by volume. As the pressure on the fluid increases, the amount of air that can be absorbed also increases.

Now we know that the air is most likely present in the fluid but the next question is "How does the air get out of the fluid?" The air, while it is in suspension, will pose no problem to the operation of the hydraulic system. But once it is separated into bubbles then all the factors are present to support combustion. The air in suspension can be separated when the fluid is subjected to a negative pressure (vacuum) of as little as 3.5 psi. This can occur when the fluid is squeezed through a restriction or an orifice. The resulting pressure decrease can be sufficient to allow trapped air to separate from the fluid.

A good example may be a front mounted pump dry valve system. In the dry mode of operation, system hydraulic fluid is drawn through a small orifice. This provides lubrication and cooling for the pump but also provides a perfect situation for air separation. In addition, the flow regulator bypass at the pump output is returned back to the pump input, this recirculates the fluid/air and allows for the separation of even more air.

In cases where the seals in the packer cylinders appear to be burnt or melted consider the possibility of air ingestion. The following suggestions may help in eliminating this problem:

1. Insure that the pump suction connections are tight. It is possible for a suction hose connection to allow air in without leaking any fluid out.
2. The pump shaft seal can allow air into the system. Replace the seal if suspect.
3. Check for air ingestion around the packings on the gate valve stem. Tighten the packing nut if suspect.
4. Excessive system flow rate (cycle time too fast) can agitate the hydraulic fluid. Set the cycle time according to specifications.
5. Do not thin hydraulic fluid with diesel fuel (lowers the flash point). Weather permitting, use a higher flash point fluid.

After making any repairs on the hydraulic system bleed the system at reduced engine speed and pressure to remove any trapped air. Depending on the size of the component i.e. cylinder, hose, it may be necessary to cycle the unit several times. Of course the larger the air pocket the more cycles needed. To avoid potential problems thoroughly bleed all hydraulic systems and insure that all inlet connections are tight and not ingesting air.

TROUBLESHOOTING

POSSIBLE CAUSE	REMEDY
OPERATION IS ERRATIC <ol style="list-style-type: none"> SOLENOID RECEIVING ERRATIC ELECTRICAL CURRENT. SOLENOID FLEXING AT MOUNTING POINT. ENGINE MOTOR MOUNTS DEFECTIVE. HYDRAULIC FLUID TOO HOT. HYDRAULIC FLUID LEVEL TOO LOW. BYPASS IN CYLINDERS. HYDRAULIC FLUID TOO COLD. OPERATING LINKAGE BENT OR BINDING. SPOOLS OR PACKING IN DIRECTIONAL VALVE BENT OR BINDING. VALVE PACKINGS LEAKING OR TOO TIGHT IN MAIN OPERATING VALVE. 	<ol style="list-style-type: none"> CHECK ELECTRICAL SYSTEM. SEE SEC. 9, SERVICE AND REPAIR MAKE SURE SOLENOID IS MOUNTED FIRMLY AND MOUNTING DOES NOT FLEX. REPAIR OR REPLACE AS REQUIRED. CHECK FOR PROPER GRADE OF FLUID. SEE SEC. 6, PREVENTIVE MAINTENANCE. CHECK FLUID LEVEL. ADD FLUID IF NECESSARY. TEST FOR LEAKING CYLINDERS. SEE SEC. 9, SERVICE AND REPAIR. BRING FLUID TO OPERATING TEMPERATURE. CHECK FOR PROPER GRADE OF HYDRAULIC FLUID, SEE SEC. 4, SPECIFICATIONS. REPAIR, REPLACE OR REALIGN DAMAGED LINKAGE. REPAIR, REPLACE OR REALIGN. SEE SEC. 9, SERVICE AND REPAIR. REPAIR VALVE. SEE SECTION 9, SERVICE AND REPAIR.
PUMP NOISE IS EXCESSIVE NOTE ALL PUMPS MAKE A CERTAIN AMOUNT OF NOISE. <ol style="list-style-type: none"> PUMP STARVING FOR FLUID. HYDRAULIC FLUID TOO COLD. PTO DRIVE SHAFT AND/OR U-JOINTS BADLY WORN OR OUT OF BALANCE. PUMP GEARS, END PLATES, BEARINGS, ETC., BADLY WORN. IMPROPER GRADE OF HYDRAULIC FLUID (FLUID FOAMING). AIR ENTERING THE SYSTEM. 	<ol style="list-style-type: none"> OPEN GATE VALVE. CHECK FLUID LEVEL. CHECK HYDRAULIC FLUID FILTER AND TANK. SEE SEC. 6, PREVENTIVE MAINTENANCE. CHECK FOR OBSTRUCTION IN SUCTION LINES, HOSES KINKED OR COLLAPSED. BRING FLUID TO NORMAL OPERATING TEMPERATURE. CHANGE HYDRAULIC FLUID TO PROPER GRADE FOR OPERATING CONDITIONS, SEE SEC. 5, SPECIFICATIONS. REPAIR, REPLACE AND/OR BALANCE ALL PARTS. REPLACE PUMP. REPLACE WITH PROPER GRADE OF HYDRAULIC FLUID. SEE SEC. 5, SPECIFICATIONS. TIGHTEN SUCTION HOSE. TIGHTER PACKING ON THE GATE VALVE STEM. REPLACE THE PUMP SHAFT SEAL. REPLACE THE SUCTION HOSE. REPLACE THE O-RINGS ON THE PUMP.



TROUBLESHOOTING

POSSIBLE CAUSE	REMEDY
ENGINE WILL NOT SPEED UP WHEN PACKING LEVER OR SPEED-UP BUTTON IS ENGAGED <ol style="list-style-type: none"> 1. SHORT IN ELECTRICAL WIRING. 2. BLOWN FUSE ON SPEED-UP RELAY. 3. RELAY, SOLENOID, OR SWITCH ARE DEFECTIVE. 4. SOLENOID-TO-CARBURETOR OR GOVERNOR CABLE IS BROKEN. 5. ELECTRICAL SYSTEM NOT GROUNDED PROPERLY. 6. PACKING LEVER SPEED-UP SWITCH OR LINKAGE DEFECTIVE. 7. SOLENOID MOUNTING LOOSE, BROKEN OR INCORRECT. 8. TRUCK ENGINE MOUNTS LOOSE, WORN, BROKEN OR MISSING. 	<ol style="list-style-type: none"> 1. REPAIR BROKEN WIRE. SEE ELECTRICAL SYSTEM IN SEC. 9, SERVICE AND REPAIR. 2. REPLACE FUSE AND CHECK ELECTRICAL SYSTEM FOR SHORTS. SEE ELECTRICAL SYSTEM SEC. 9, SERVICE AND REPAIR. 3. CHECK FOR AND REPLACE DEFECTIVE PARTS AS DESCRIBED IN THE ELECTRICAL SYSTEM SECTION. SEE SEC. 9, SERVICE AND REPAIR. 4. REPLACE CABLE. 5. CHECK ALL GROUND CONNECTIONS FOR CORROSION OR BREAKS. CLEAN OR REPAIR AS DESCRIBED IN THE ELECTRICAL SYSTEM SECTION. SEE SEC. 9, SERVICE AND REPAIR. 6. REPAIR, REPLACE OR ADJUST AS REQUIRED. 7. BE SURE SOLENOID MOUNTING IS CORRECT AND SECURE. 8. REPAIR OR REPLACE ENGINE MOUNTS AS REQUIRED.
ENGINE SPEED WILL NOT RETURN TO NORMAL WHEN PACKING CYCLE IS COMPLETED OR SPEED-UP BUTTON IS RELEASED <ol style="list-style-type: none"> 1. SHORT CIRCUIT IN ELECTRICAL SYSTEM. 2. PACKING LEVER SPEED-UP SWITCH IS DEFECTIVE. 3. SOLENOID MOUNTING LOOSE, BROKEN OR INCORRECT. 4. TRUCK ENGINE MOUNTS LOOSE, WORN, BROKEN OR MISSING. 	<ol style="list-style-type: none"> 1. CHECK FOR AND REPAIR SHORT IN SYSTEM DESCRIBED IN ELECTRICAL SECTION. SEE SEC. 9, SERVICE AND REPAIR. 2. REPAIR, REPLACE OR ADJUST AS REQUIRED. 3. BE SURE SOLENOID MOUNTING IS CORRECT AND SECURE. 4. REPAIR OR REPLACE ENGINE MOUNTS AS REQUIRED.
MAIN OPERATING VALVE SHIFTS (REVERSES) TOO SOON <ol style="list-style-type: none"> 1. OBJECT IN HOPPER THAT PACKER PLATE CAN NOT PENETRATE. 2. CYCLE TIME TOO FAST. 3. REVERSING PRESSURE TOO LOW. 4. BROKEN REVERSING SPRING. 5. LOOSE SCREW IN SPOOL OF DIRECTIONAL VALVE FOR PACKER PLATE CYLINDERS. 	<ol style="list-style-type: none"> 1. RECYCLE UNIT. REARRANGE OR REMOVE REFUSE IF NECESSARY. 2. ADJUST SOLENOID-CARBURETOR CABLE LENGTH. 3. PERFORM PRESSURE CHECKS AS DESCRIBED IN SEC. 7, CHECK-OUT. 4. REPLACE REVERSING SPRING AS DESCRIBED IN SEC. 9, SERVICE AND REPAIR. 5. TIGHTEN SCREW AS DESCRIBED IN SEC. 9, SERVICE AND REPAIR.
MAIN OPERATING VALVE SHIFTS TO NEUTRAL (KNOCKS OUT) TOO SOON <ol style="list-style-type: none"> 1. WEAK OR BROKEN KNOCKOUT SPRING IN MAIN OPERATING VALVE. 2. NOT ENOUGH ROOM BETWEEN END OF KNOCKOUT PLUNGER AND ADJUSTING BOLT ON KNOCKOUT PIVOT IN MAIN OPERATING VALVE. 3. KNOCKOUT PRESSURE TOO LOW. 	<ol style="list-style-type: none"> 1. REPLACE SPRING. SEE SEC. 9, SERVICE AND REPAIR. 2. ADJUST SPACE AS DESCRIBED IN MAIN OPERATING VALVE LATER IN SECTION 9, SERVICE AND REPAIR. 3. PERFORM PRESSURE CHECKS AS DESCRIBED IN SEC. 7, CHECK-OUT.

TROUBLESHOOTING

POSSIBLE CAUSE	REMEDY
MAIN OPERATING VALVE WILL NOT SHIFT (REVERSE)	
<ol style="list-style-type: none"> 1. PACKER PLATE CYLINDER SEALS LEAKING. 2. BROKEN ARM SPRING IN MAIN OPERATING VALVE. 3. PACKING TOO TIGHT. 4. SQUARE BLOCK ON REVERSING PLUNGER IN MAIN OPERATING VALVE NOT ADJUSTED PROPERLY. 5. WORN PARTS ON MAIN OPERATING VALVE BRIDGE ASSEMBLY. 6. PLUGGED OIL JET ORIFICE IN MAIN OPERATING VALVE. 7. MAIN OPERATING VALVE ROLLERS WILL NOT STAY IN DETENT. 	<ol style="list-style-type: none"> 1. PERFORM TEST FOR LEAKING CYLINDER SEALS. SEE SEC. 9, SERVICE AND REPAIR. 2. REPLACE ARM SPRING. SEE SEC. 9, SERVICE AND REPAIR. 3. ADJUST PACKING. SEE SEC. 9, SERVICE AND REPAIR. 4. ADJUST BLOCK. SEE SEC. 9, SERVICE AND REPAIR. 5. REPLACE PARTS. SEE SEC. 9, SERVICE AND REPAIR. 6. CLEAN ORIFICE. SEE SEC. 9, SERVICE AND REPAIR. 7. REPAIR. SEE MAIN OPERATING VALVE. SEE SEC. 9, SERVICE AND REPAIR.
MAIN OPERATING VALVE WILL NOT SHIFT TO NEUTRAL (KNOCKOUT)	
<ol style="list-style-type: none"> 1. BROKEN PIVOT ON MAIN OPERATING VALVE. 2. PACKING IN MAIN OPERATING VALVE TOO TIGHT. 3. BENT LINKAGE ON MAIN OPERATING VALVE. 4. CARRIER CYLINDER PACKING IS LEAKING. 5. PRESSURE TOO LOW. 6. INTERNAL MAIN OPERATING VALVE PASSAGE RESTRICTED. 7. CENTER SPOOL IN MAIN OPERATING VALVE JAMMED. 8. TOO MANY WASHERS UNDER KNOCKOUT SPRING IN MAIN OPERATING VALVE. 	<ol style="list-style-type: none"> 1. REPLACE PIVOT. SEE SEC. 9, SERVICE AND REPAIR. 2. ADJUST PACKING. SEE SEC. 9, SERVICE AND REPAIR. 3. ALIGN OR REPLACE LINKAGE. SEE SEC. 9, SERVICE AND REPAIR. 4. REPLACE PACKING. SEE SEC. 9, SERVICE AND REPAIR. 5. PERFORM PRESSURE CHECK. SEE SEC. 7, CHECK-OUT. 6. CLEAN VALVE. SEE MAIN OPERATING VALVE, SEC. 8, TROUBLESHOOTING. 7. CLEAN VALVE/REPLACE A DEFECTIVE SPOOL. SEE MAIN OPERATING VALVE, SEE SEC. 8, TROUBLESHOOTING. 8. REMOVE WASHERS. SEE MAIN OPERATING VALVE, SEC. 8, TROUBLESHOOTING.
PACKER PLATE DOES NOT DELIVER FULL FORCE TO PACK LOAD INTO BODY	
<ol style="list-style-type: none"> 1. HYDRAULIC PRESSURE INCORRECT. 2. HYDRAULIC FLUID LEVEL IN TANK IS LOW. 3. HYDRAULIC FILTER IS DIRTY (THIS CONDITION WILL STARVE PUMP AND CAUSE NOISE IN SYSTEM). 4. WRONG TYPE OF HYDRAULIC FLUID IN SYSTEM. 5. MAIN RELIEF SECTION OF 2-SPOOL DIRECTIONAL VALVE HAS WEAK OR DEFECTIVE PART. 6. HYDRAULIC PUMP IS DEFECTIVE AND WILL NOT DELIVER FULL PRESSURE. 7. OPERATING CYLINDER PISTON SEALS ARE LEAKING. 8. SPRING IN MAIN OPERATING VALVE WEAK OR BROKEN. 	<ol style="list-style-type: none"> 1. PERFORM CHECKOUT PROCEDURES THROUGH PRESSURE CHECKS. SEE SEC. 7. 2. ADD FLUID TO CORRECT LEVEL. SEE SEC. 6, PREVENTIVE MAINTENANCE. 3. SERVICE SYSTEM AS DESCRIBED IN SEC. 6, PREVENTIVE MAINTENANCE. 4. DRAIN AND REFILL WITH CORRECT TYPE OF HYDRAULIC FLUID. SEE SEC. 6, PREVENTIVE MAINTENANCE. 5. REPLACE RELIEF SECTION. SEE SEC. 9, SERVICE AND REPAIR. 6. REPLACE PUMP. SEE SEC. 9, SERVICE AND REPAIR. 7. PERFORM TEST FOR LEAKING CYLINDER SEALS. SEE SEC. 9, SERVICE AND REPAIR. 8. ADJUST BY ADDING SHIMS, OR REPLACE SPRING AS DESCRIBED IN MAIN OPERATING VALVE.



SECTION 8

TROUBLESHOOTING

POSSIBLE CAUSE	REMEDY
PACKER PLATE DOES NOT DELIVER FULL FORCE TO PACK LOAD INTO BODY	
9. KNOCKOUT PRESSURES ARE TOO LOW. 10. AIR IN HYDRAULIC LINES.	9. PERFORM PRESSURE CHECKS. SEE SEC. 7, CHECK-OUT. 10. CYCLE PACKER 6 OR 7 TIMES TO BLEED AIR OUT OF SYSTEM.
PACKER PLATE DRIFTS OPEN	
1. PACKER PLATE CYLINDER PISTON SEALS LEAKING. 2. 3,000 LB. RELIEF VALVE OUT OF ADJUSTMENT OR DEFECTIVE.	1. PERFORM TEST FOR LEAKING PACKER CYLINDER. SEE SEC. 9, SERVICE AND REPAIR. 2. PERFORM TEST/ADJUSTMENT FOR RELIEF VALVE. SEE SEC. 9, SERVICE AND REPAIR.
PUSHOUT CYLINDER WILL NOT EXTEND TO PUSH OUT LOAD	
1. SEQUENCE VALVE CARTRIDGE IS DEFECTIVE. 2. PUSHOUT BAR BENT AND JAMMING AGAINST PUSHOUT PLATE. 3. OPERATOR TRYING TO PUSH LOAD OUT AGAINST PILE OF REFUSE, DIRT OR BANK OF HILL. 4. LINKAGE TO 2-SPOOL DIRECTIONAL VALVE BROKEN OR BENT. 5. LEAKING PISTON SEALS IN PUSHOUT CYLINDER. 6. HYDRAULIC TUBING IS DAMAGED (PINCHED SHUT). 7. MAIN RELIEF PRESSURE TOO LOW	1. REPLACE CARTRIDGE OR ADJUST. SEE SEC. 9, SERVICE AND REPAIR. 2. REALIGN OR REPLACE PUSHOUT BAR. 3. UNLOAD UNIT AS DESCRIBED IN SEC. 3, OPERATION. 4. REPAIR OR REPLACE LINKAGE. 5. PERFORM TEST FOR LEAKING CYLINDER PISTON SEALS AND REPAIR AS REQUIRED. SEE SEC. 9, SERVICE AND REPAIR. 6. REPLACE TUBING. 7. CHECK PRESSURE. SEE SEC. 7, CHECK-OUT.
LOAD WILL NOT PUSH OUT (CLAMP SLIPS AND PUSHOUT BAR SLIDES THROUGH PUSHOUT PLATE)	
1. PUSHOUT BAR HAS GREASE ON IT. 2. PUSHOUT BAR IS WORN. 3. UNLOADING BODY ON UPHILL GRADE. 4. REFUSE JAMMED BEHIND CLAMP LEVER PREVENTING CLAMP FROM BEING APPLIED. 5. U-CUPS IN CLAMP CYLINDER LEAK. 6. CLAMP CYLINDER MOUNTING BROKEN OR LOOSE. 7. SEQUENCE VALVE PRESSURE IS TOO LOW. 8. CLAMP CYLINDER NOT HOLDING. 9. CLAMP PARTS WORN. 10. SPRING BOTTOMS OUT BEFORE CLAMP IS TIGHT.	1. CLEAN BAR AND AREA AROUND BAR. 2. REPLACE PUSHOUT BAR OR INSTALL SHIMS BEHIND STATIONARY BLOCK. 3. UNLOAD BODY ON LEVEL OR DOWNHILL GRADE (REAR OF UNIT LOWER THAN CAB). 4. CLEAN OUT AREA AROUND CLAMP. 5. PERFORM TEST FOR LEAKING CYLINDER CUPS AND REPAIR. SEE SEC. 9, SERVICE AND REPAIR. 6. REPAIR OR REPLACE MOUNTING. SEE CLAMP ASSEMBLY, SEC. 9, SERVICE AND REPAIR. 7. REPLACE SEQUENCE VALVE CARTRIDGE. SEE SEC. 9, SERVICE AND REPAIR. 8. PERFORM TEST FOR LEAKING CYLINDER SEALS. SEE SEC. 9, SERVICE AND REPAIR. 9. REPLACE WORN PARTS. SEE CLAMP ASSEMBLY SEC. 9, SERVICE AND REPAIR. 10. SHIM CLAMP.

TROUBLESHOOTING

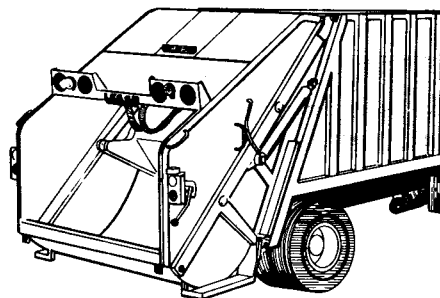
POSSIBLE CAUSE	REMEDY
PUSHOUT PLATE RETURNS WHEN PUSHOUT CYLINDER IS RETRACTED (CLAMP WILL NOT RELEASE)	
<ol style="list-style-type: none"> 1. REFUSE UNDER PUSHOUT BAR AND/OR REFUSE JAMMING AGAINST PUSHOUT PLATE. 2. CLAMP SPRING BROKEN. 3. PUSHOUT BAR BENT AND BINDING ON PUSHOUT PLATE. 4. CRACKED OR BROKEN CLAMP BLOCK. 5. OPERATOR HOLDING SPEED UP BUTTON. 	<ol style="list-style-type: none"> 1. CLEAN OUT AREA AROUND PUSHOUT BAR AND CLAMP. 2. REPLACE SPRING CLAMP ASSEMBLY. SEE SEC. 9, SERVICE AND REPAIR. 3. STRAIGHTEN OR REPLACE PUSHOUT BAR. 4. REPLACE CLAMP BLOCK. SEE CLAMP ASSEMBLY, SEC. 9, SERVICE AND REPAIR. 5. RELEASE SPEED UP BUTTON
CYCLE TIME TOO SLOW	
<ol style="list-style-type: none"> 1. SOLENOID TO CARBURETOR OR GOVERNOR LINKAGE CABLE OUT OF ADJUSTMENT. 2. HYDRAULIC FLUID LEVEL TOO LOW. 3. HYDRAULIC FLUID FILTER NEEDS SERVICING. 4. HYDRAULIC TANK BREATHER DIRTY. 5. HYDRAULIC PUMP WORN OR DEFECTIVE. 6. OPERATING CYLINDER PISTON SEALS LEAKING. 7. INCORRECT GRADE OF HYDRAULIC FLUID FOR CURRENT OPERATING CONDITIONS. 8. SOLENOID MOUNTING LOOSE OR BROKEN. 9. SOLENOID OR WIRING DEFECTIVE. 10. DEFECTIVE GOVERNOR (DIESEL ENGINE). 11. REGEN VALVE CLOGGED. 	<ol style="list-style-type: none"> 1. ADJUST CABLE TO ACHIEVE 26-28 SECOND CYCLE TIME. 2. FILL TO PROPER LEVEL. SEE SEC. 6, PREVENTIVE MAINTENANCE. 3. SERVICE FILTER. SEE SEC. 6, PREVENTIVE MAINTENANCE. 4. SERVICE BREATHER. SEE SEC. 6, PREVENTIVE MAINTENANCE. 5. REPLACE PUMP. SEE SEC. 9, SERVICE AND REPAIR. 6. PERFORM TEST FOR LEAKING OPERATING CYLINDER SEALS AND REPAIR AS REQUIRED. SEE SEC. 9, SERVICE AND REPAIR. 7. REFILL WITH PROPER GRADE OF HYDRAULIC FLUID. SEE SEC. 5, SPECIFICATIONS 8. REMOUNT SOLENOID SECURELY (ON ENGINE IF POSSIBLE) 9. REPAIR OR REPLACE AS REQUIRED. SEE ELECTRICAL SYSTEM, SEC. 9, SERVICE AND REPAIR. 10. DIESEL ENGINE MUST HAVE A FULL VARIABLE SPEED GOVERNOR TO PROPERLY OPERATE PACKER. 11. CLEAN REGEN VALVE, SEE SEC. 9, SERVICE AND REPAIR.
TAILGATE WILL NOT RAISE	
<ol style="list-style-type: none"> 1. TAILGATE CLAMPS STILL ENGAGED. 2. INSUFFICIENT HYDRAULIC PRESSURE. 3. HYDRAULIC PUMP IS DEFECTIVE. 4. SPRING IN RELIEF SECTION OF 2-SPOOL DIRECTIONAL VALVE OUT OF ADJUSTMENT OR BROKEN. 5. TAILGATE LIFT CYLINDERS LEAKING OR DEFECTIVE. 6. CONTROL LINKAGE BENT OR BROKEN. 7. RESTRICTION IN TAILGATE CYLINDER HOSE. 	<ol style="list-style-type: none"> 1. DISCONNECT CLAMPS AND SWING FREE OF TAILGATE. 2. CHECK MAIN RELIEF PRESSURE. SEE SEC. 7, CHECK-OUT PROCEDURES. 3. REPLACE PUMP. SEE SEC. 9, SERVICE AND REPAIR. 4. ADJUST OR REPLACE SPRING AS NECESSARY. SEE SEC. 9, SERVICE AND REPAIR. 5. REPAIR OR REPLACE AS REQUIRED. SEE SEC. 9, SERVICE AND REPAIR. 6. REPAIR OR REPLACE LINKAGE AS REQUIRED. 7. REMOVE AND CLEAN HOSE.

TROUBLESHOOTING

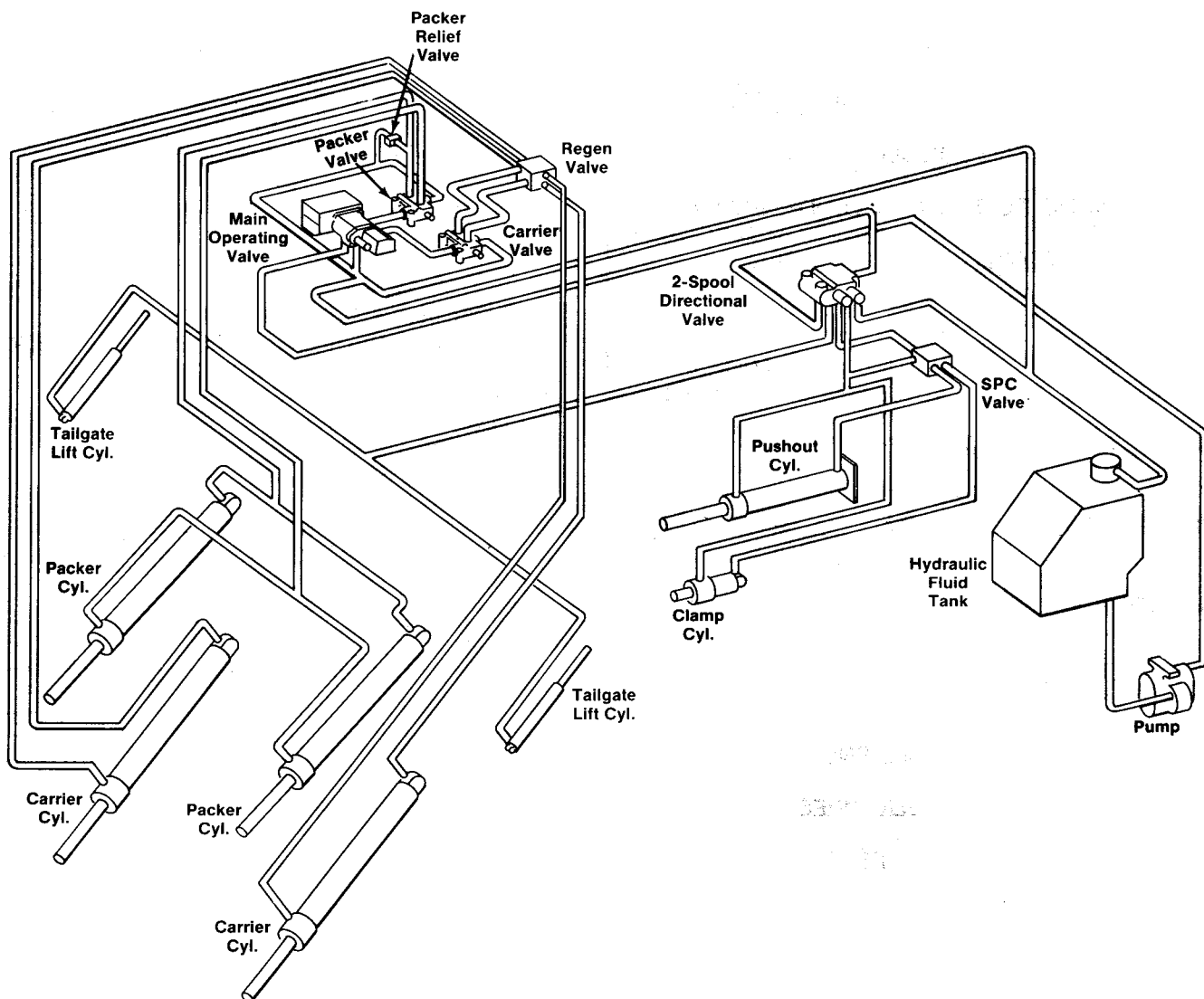
DESCRIPTION OF HYDRAULIC SYSTEM

The following is a description with flow diagrams of what happens in the hydraulic system during the loading, packing and unloading operations of the Alpha.

Operator action is presented and then a description of hydraulic flow and the interaction of system components (i.e., valves and cylinders) follows. Before proceeding to the flow diagram refer to the illustration and become familiar with the system component nomenclature.



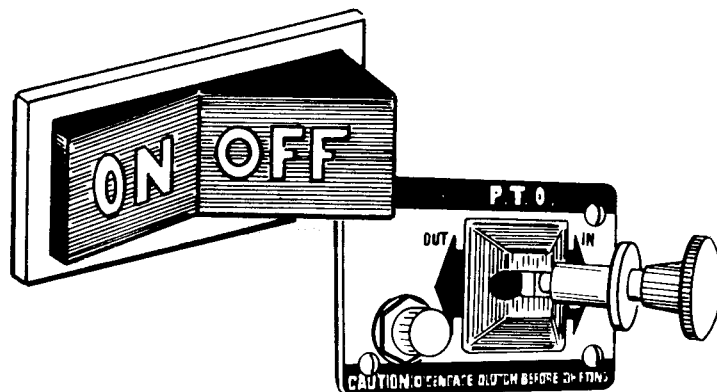
SYSTEM COMPONENT NOMENCLATURE



NEUTRAL (with packer plate in "Home" position.)

OPERATOR ACTION

The operator starts the truck and engages the PTO and speed up system.

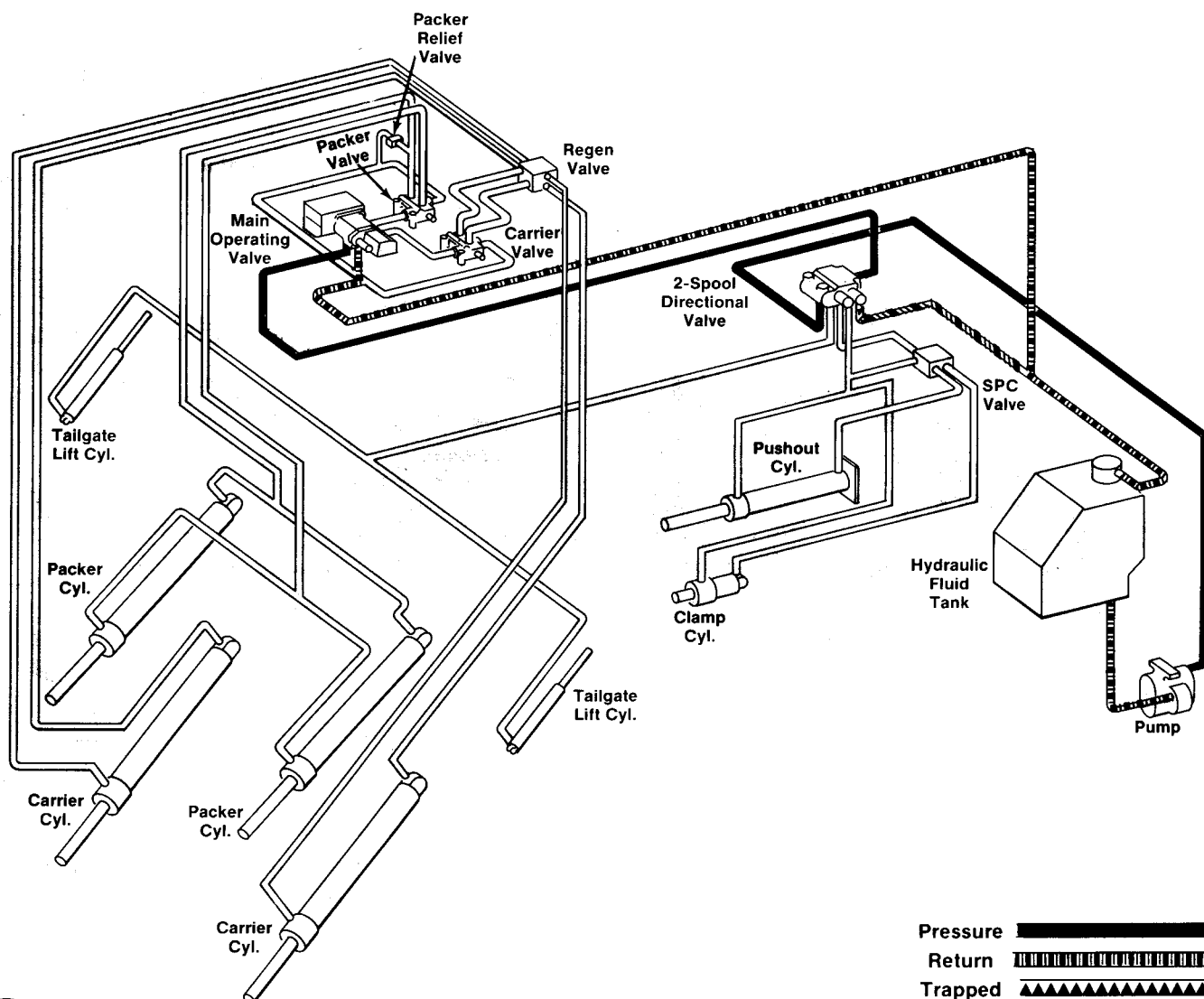


HYDRAULIC SYSTEM

Hydraulic fluid flows from the tank, by gravity, to the pump. From there it is pumped to the 2-spool directional valve. Flow continues through the valve to and through the main operating valve and then back to the tank. During the packer operation, if pressure increases to the main relief setting, excess flow will be diverted from the 2-spool valve back to the tank.

NOTE

A description of the Main Operating Valve (MOV) function may be found later in this section.

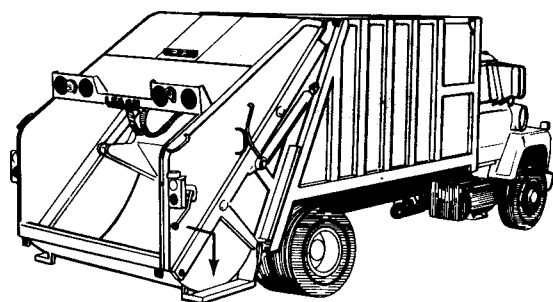


TROUBLESHOOTING

START OF PACKING CYCLE. PACKER PLATE SWEEPS BACK OVER LOAD

OPERATOR ACTION

The operator moves the control lever out and down to start the packing cycle.



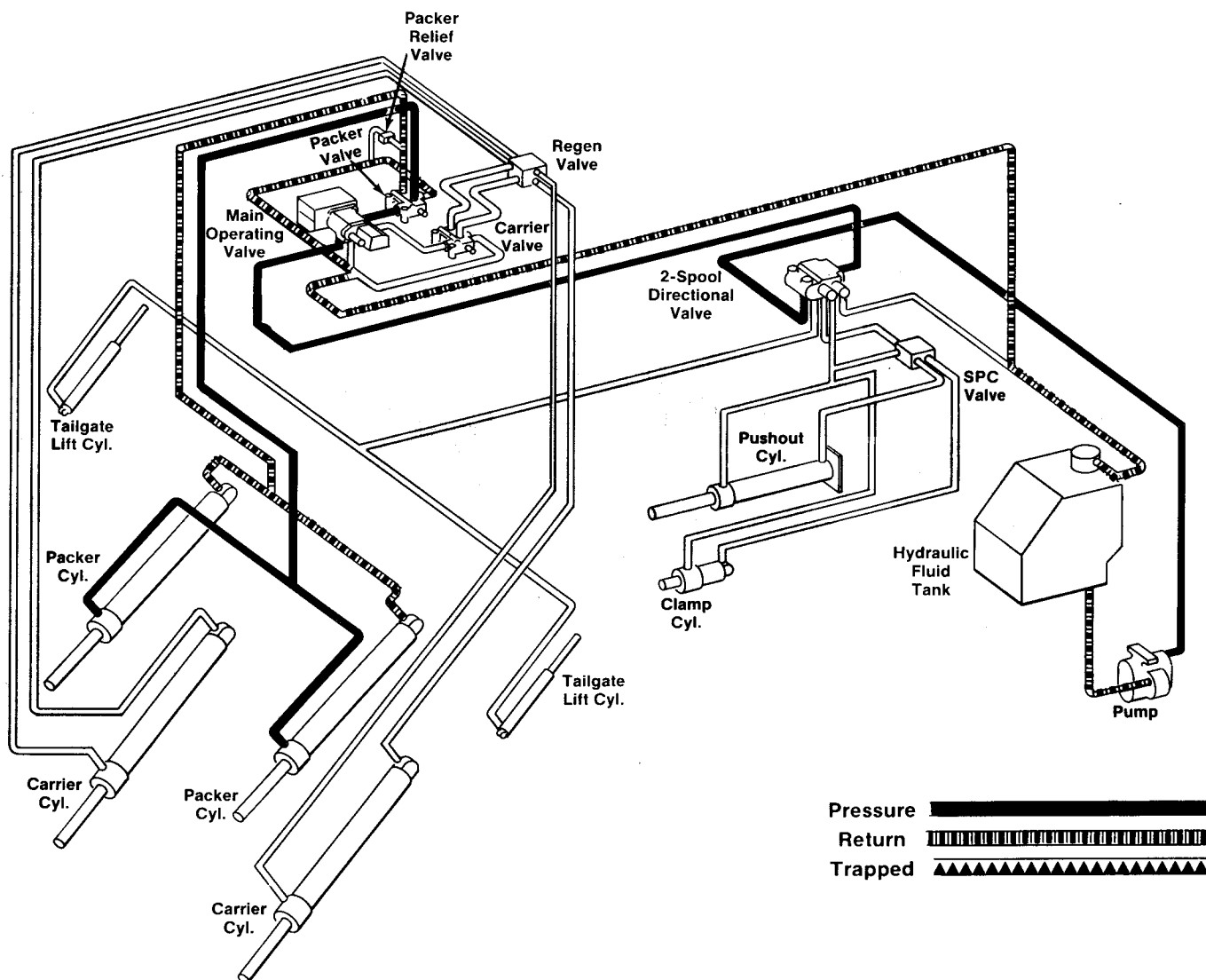
PACKING
LEVER

HYDRAULIC SYSTEM

The operator action causes the main operating valve to shift, diverting flow through the packer plate single spool valve to the rod end of the packer plate cylinders. The packer plate cylinders retract causing the packer plate to sweep rearward over the load. Return fluid flow from the cylinder is through the single-spool valve to the tank.

NOTE

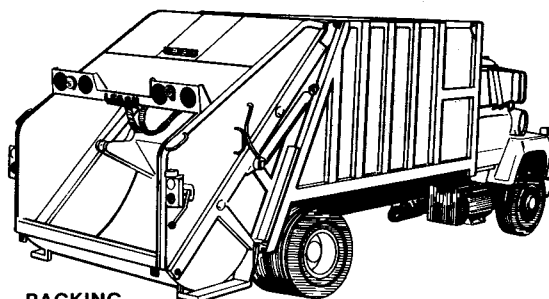
A description of the Main Operating Valve (MOV) function may be found later in this section.



CARRIER & PACKER PLATES MOVE DOWN TO "INTERRUPTED CYCLE" POSITION

OPERATOR ACTION

None—Main Operating Valve shifts automatically.



PACKING
LEVER

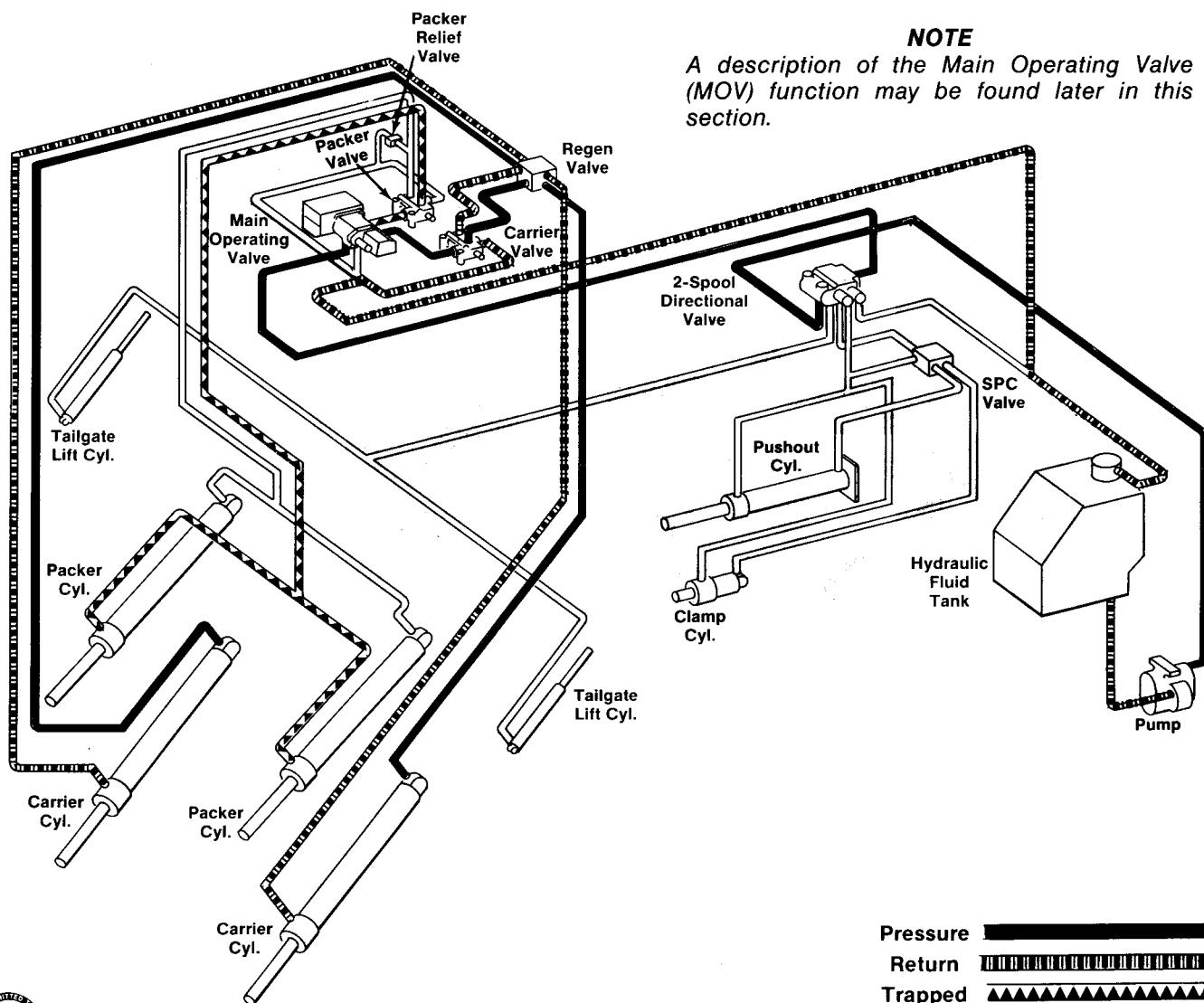
HYDRAULIC SEQUENCE

At the end of the packer plate cylinder stroke, pressure builds to 1200 PSI causing the main operating valve to shift (reverse), diverting flow through the carrier plate single spool and regen valve to the case end of the carrier cylinders. The regen valve directs some exhaust fluid from the carrier cylinder rod end to the case end, thus increasing flow volume and re-

ducing cycle time. The cylinders extend, moving the carrier and packer plates down to the "interrupted cycle" position (trapped fluid keeps the packer plate cylinders retracted). At the end of the carrier cylinder extension stroke, pressure builds to 1400 PSI causing the main operating valve to shift to neutral. (Knock out)

NOTE

A description of the Main Operating Valve (MOV) function may be found later in this section.

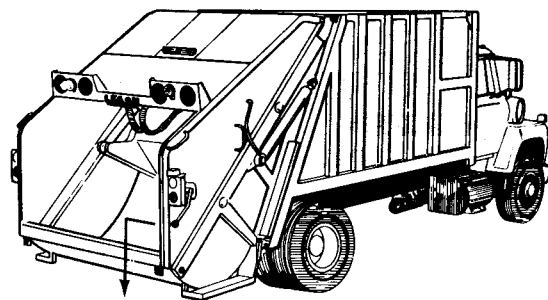


TROUBLESHOOTING

CONTINUE PACKING CYCLE PACKER PLATE SWEEPS HOPPER.

OPERATOR ACTION

The operator shifts the control lever in and down to start compaction.



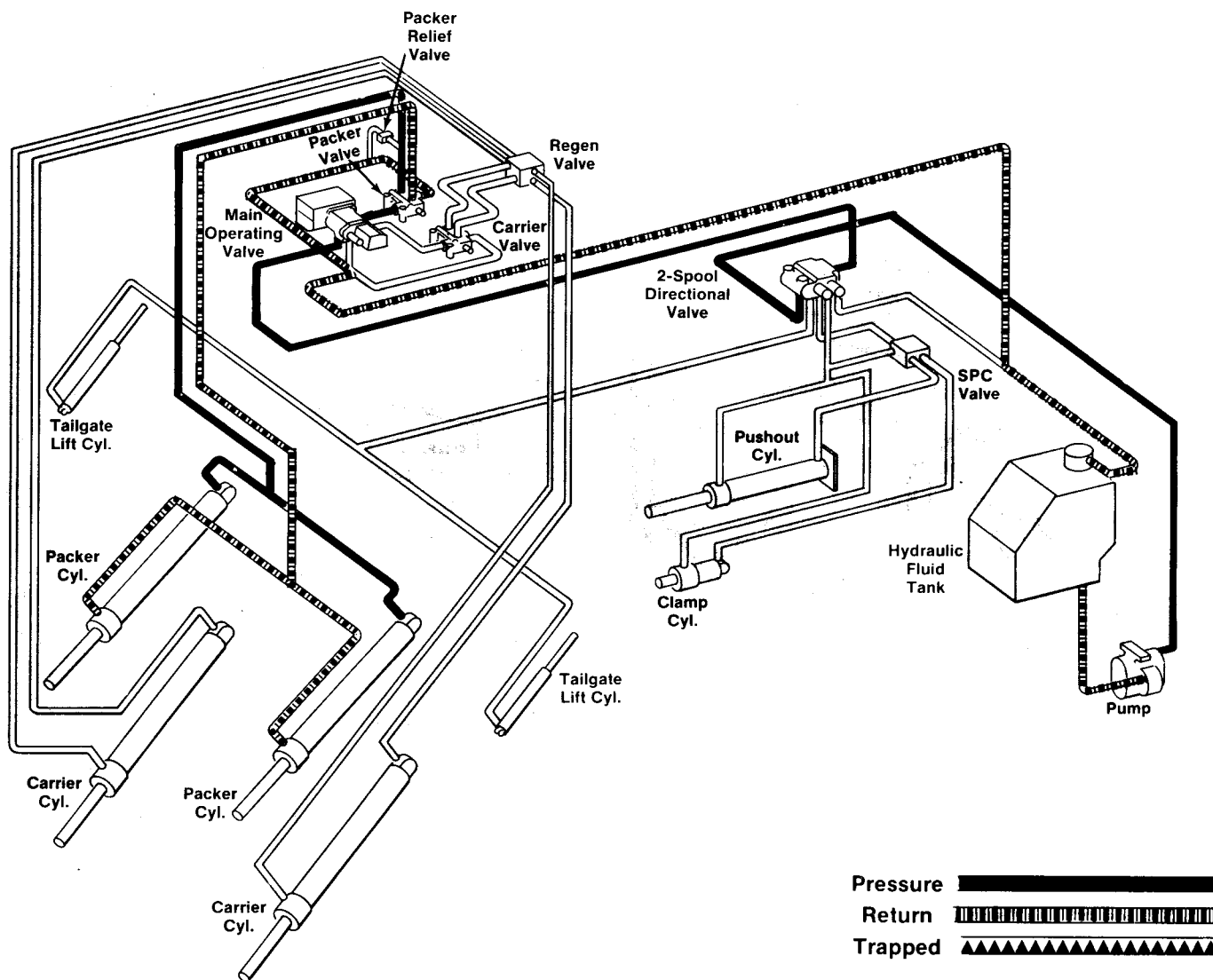
PACKING
LEVER

HYDRAULIC SEQUENCE

Fluid flow is from the main operating valve through the packer single spool valve to the case end of the packer plate cylinders. As the cylinders extend, the packer plate sweeps the load forward in the hopper. As the packer cylinder extension stroke continues, pressure builds to 1200 PSI causing the main operating valve to shift (reverse).

NOTE

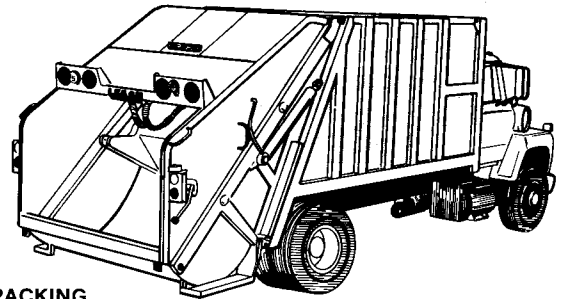
A description of the Main Operating Valve (MOV) function may be found later in this section.



PACKING REFUSE

OPERATOR ACTION

None-Main Operating Valve shifts automatically.



PACKING LEVER

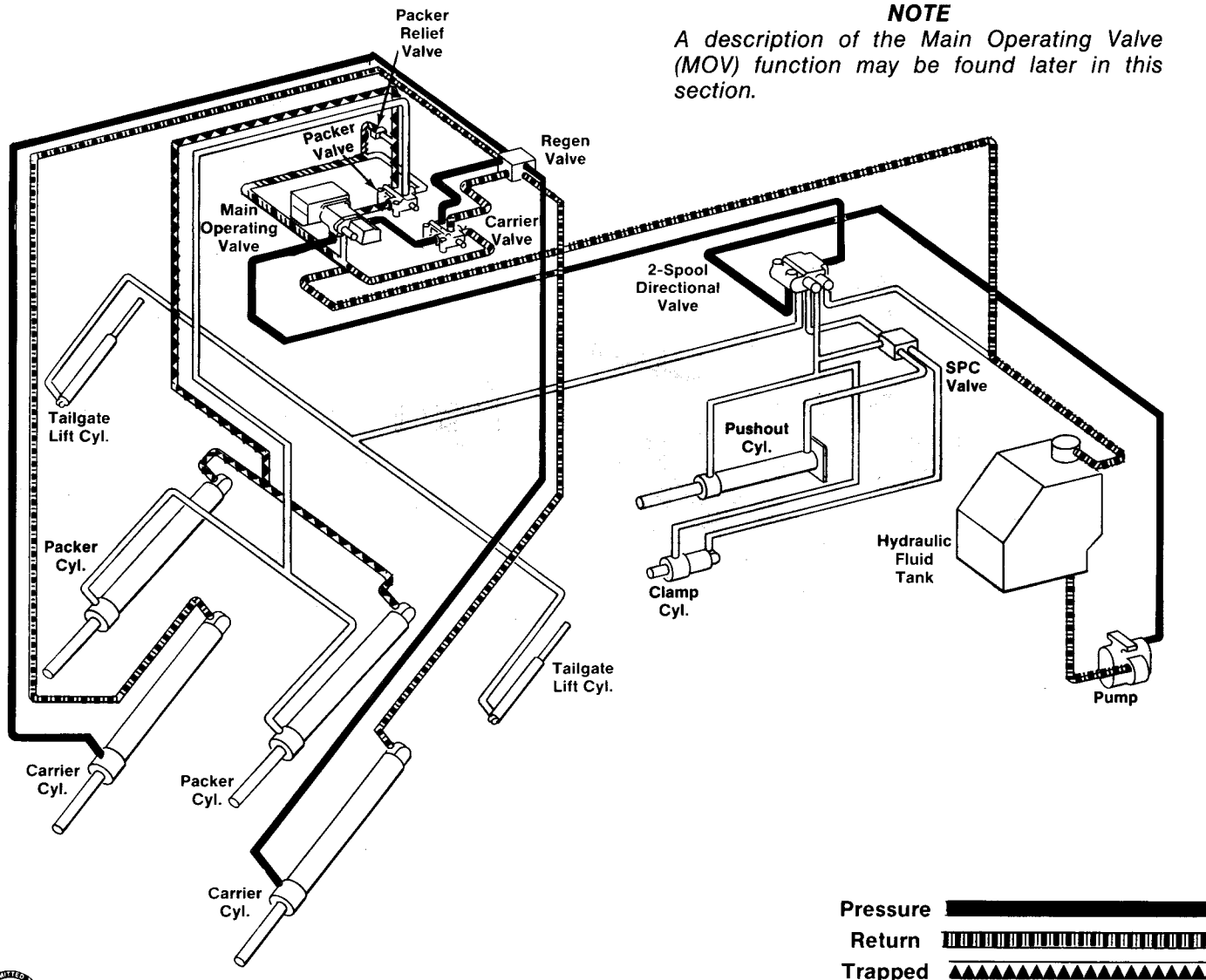
HYDRAULIC SEQUENCE

Fluid flows from the main operating valve through the carrier plate single spool and regen valve to the rod end of the carrier plate cylinders. The cylinders retract, moving the carrier and packer plates up, packing refuse against the pushout plate. When pressure reaches 1400 PSI the main operating valve

shifts into neutral and the packing cycle is completed (knockout). As the carrier cylinders apply force to compacted refuse, the pressure of the trapped fluid in the packer cylinders will increase. Should this pressure reach 3200 PSI, a relief valve will open reducing the pressure by allowing some trapped fluid to escape.

NOTE

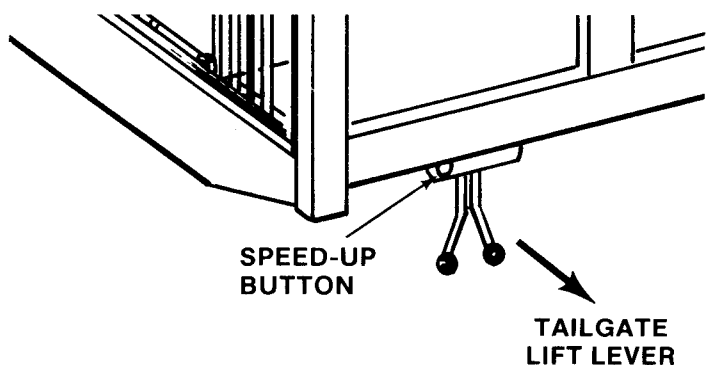
A description of the Main Operating Valve (MOV) function may be found later in this section.



RAISING TAILGATE

OPERATOR ACTION

Operator opens packer plate to release pressure against load.
Operator loosens tailgate clamps.
Operator depresses speed-up button.
Operator pulls tailgate lift lever outward.

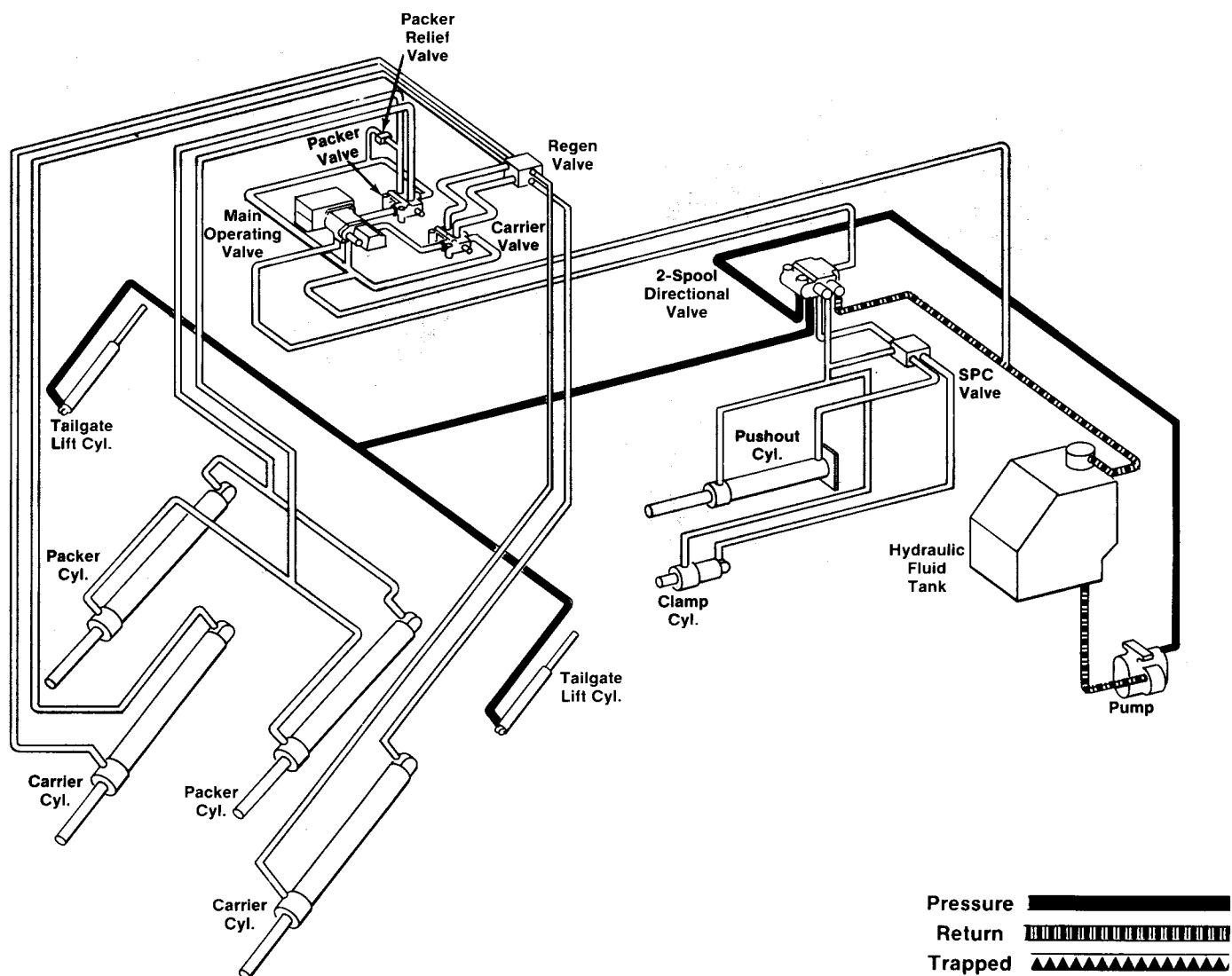


HYDRAULIC SEQUENCE

Pulling the tailgate lift lever outward shifts a spool in the 2-spool directional valve causing flow to the tailgate lift cylinders. The cylinders extend, causing the tailgate to raise. Excess fluid flow from the 2-spool valve returns back to the tank.

NOTE

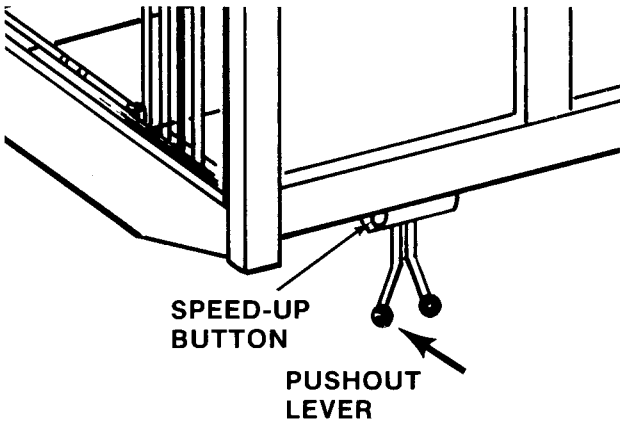
A description of the Main Operating Valve (MOV) function may be found later in this section.



EJECTING LOAD

OPERATOR ACTION

The operator depresses the speed-up button and moves the pushout lever inward.



HYDRAULIC SEQUENCE

Pushing the pushout lever inward shifts a spool in the 2-spool directional valve causing fluid flow to the clamp cylinder. As the cylinder extends, it clamps the pushout plate to the pushout bar attached to the pushout cylinder.

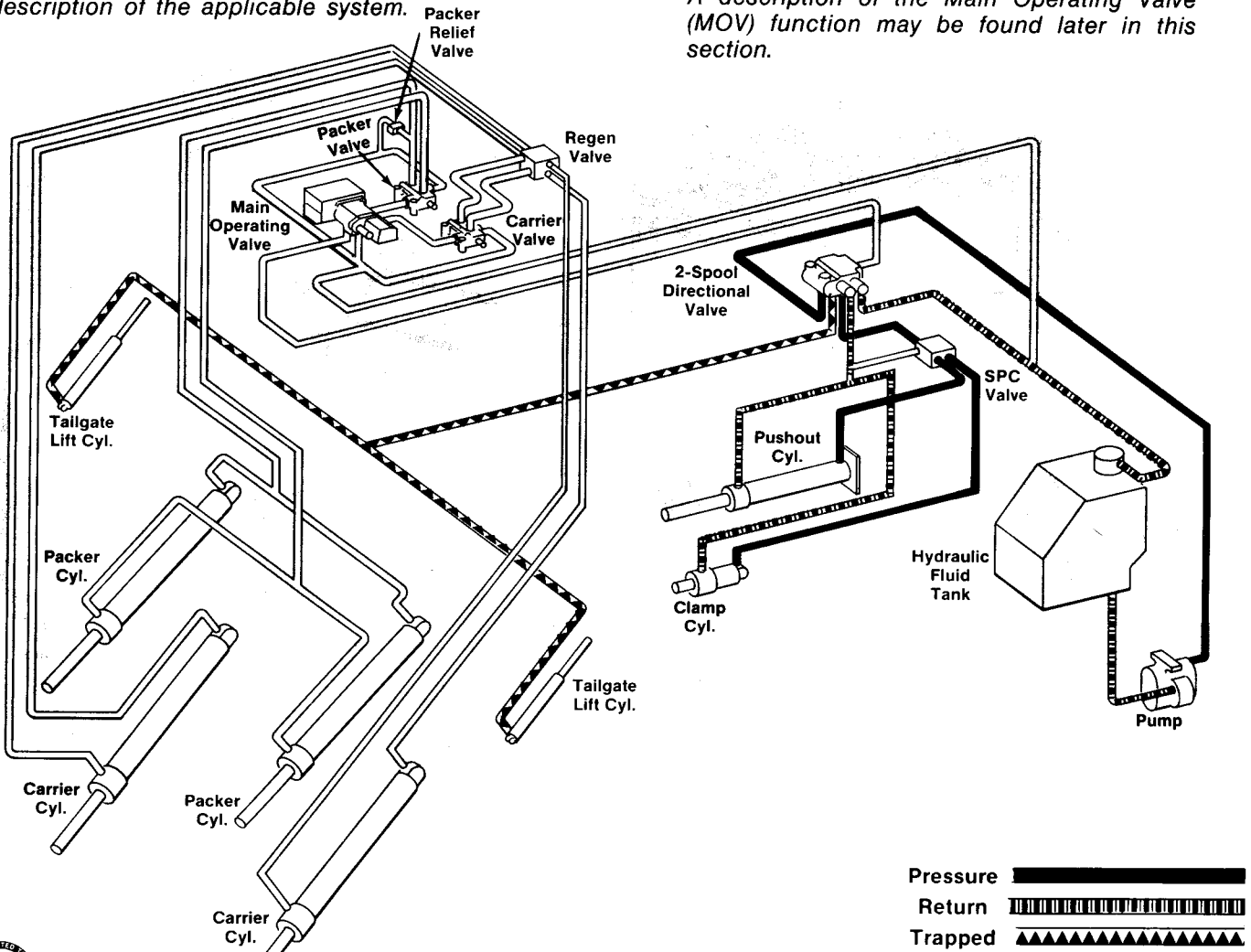
NOTE

This description applies to the standard pushout system. For units with the telescopic pushout option, refer to Sec. 10, OPTIONS for a description of the applicable system.

When the hydraulic pressure reaches 1200 PSI, the sequence pilot check valve (SPC) opens diverting fluid flow to the case end of the pushout cylinder. As the cylinder extends the pushout plate moves to the rear, ejecting the load. A ball check in the SPC valve prevents fluid from bleeding out of the clamp cylinder when the pushout control is in neutral.

NOTE

A description of the Main Operating Valve (MOV) function may be found later in this section.

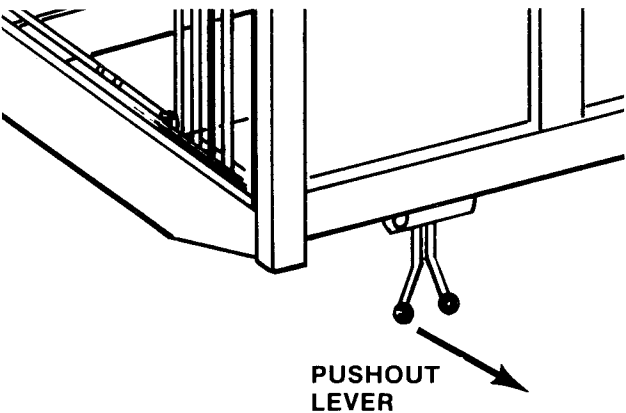


TROUBLESHOOTING

RETRACTING PUSHOUT BAR

OPERATOR ACTION

The operator pulls the pushout lever outward.

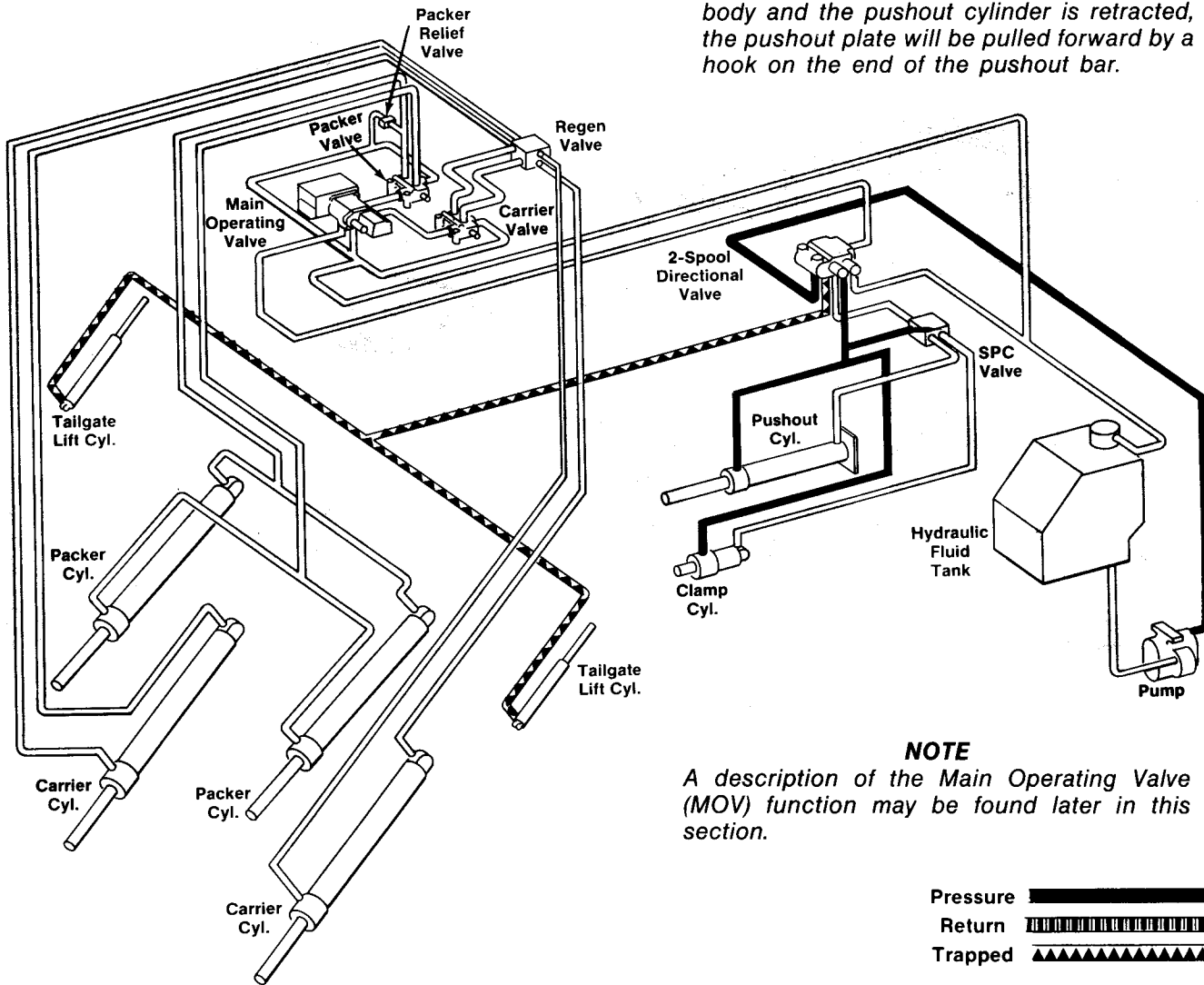


HYDRAULIC SEQUENCE

Moving the pushout lever outward shifts a spool in the 2-spool valve causing fluid flow to the clamp cylinder and the rod end of the pushout cylinder. This hydraulic action first releases the SPC check valve and then retracts the clamp cylinder. The released clamp mechanism allows the pushout plate to remain stationary while the bar slides through as the pushout cylinder is retracted.

NOTE

Ejecting the load and retracting the pushout plate sequences are repeated by the operator as many times as needed to fully eject the load, the pushout plate being left further back each time the clamp is released and the pushout cylinder is retracted. When the pushout plate is at the extreme rear of the body and the pushout cylinder is retracted, the pushout plate will be pulled forward by a hook on the end of the pushout bar.



NOTE

A description of the Main Operating Valve (MOV) function may be found later in this section.



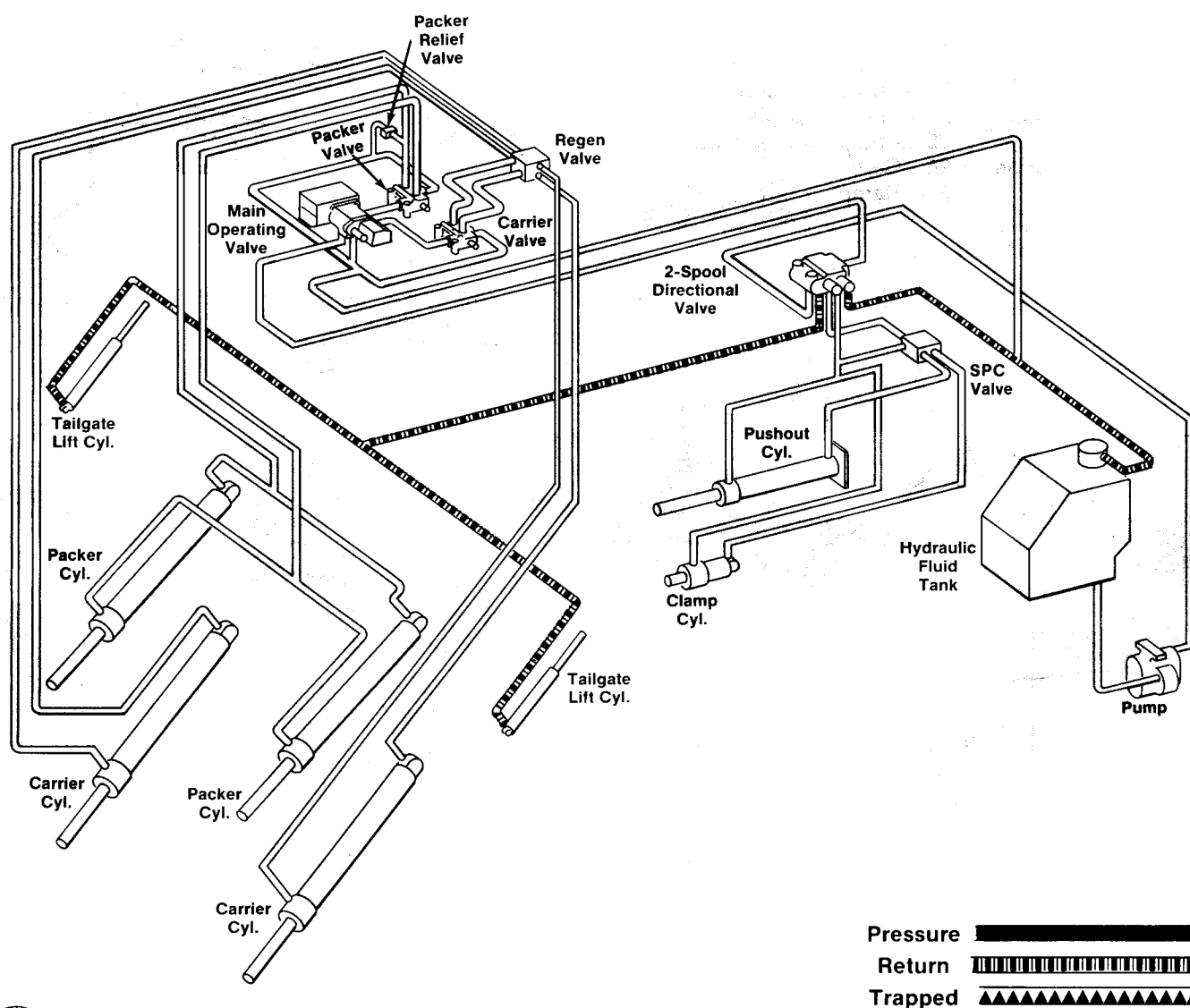
OPERATOR ACTION

A line drawing showing the underside of a vehicle's tailgate. A lever is attached to the bottom edge of the tailgate, with two small wheels or rollers at its base. An arrow points to this lever with the text "TAILGATE LIFT LEVER".

Pushing the tailgate lift lever inward shifts a spool in the 2-spool valve allowing fluid in the tailgate lift cylinders to drain back to the tank. The weight of the tailgate forces fluid out of the cylinders; the cylinders retract and the tailgate lowers.

NOTE

A description of the Main Operating Valve (MOV) function may be found later in this section.



SECTION 8 TROUBLESHOOTING

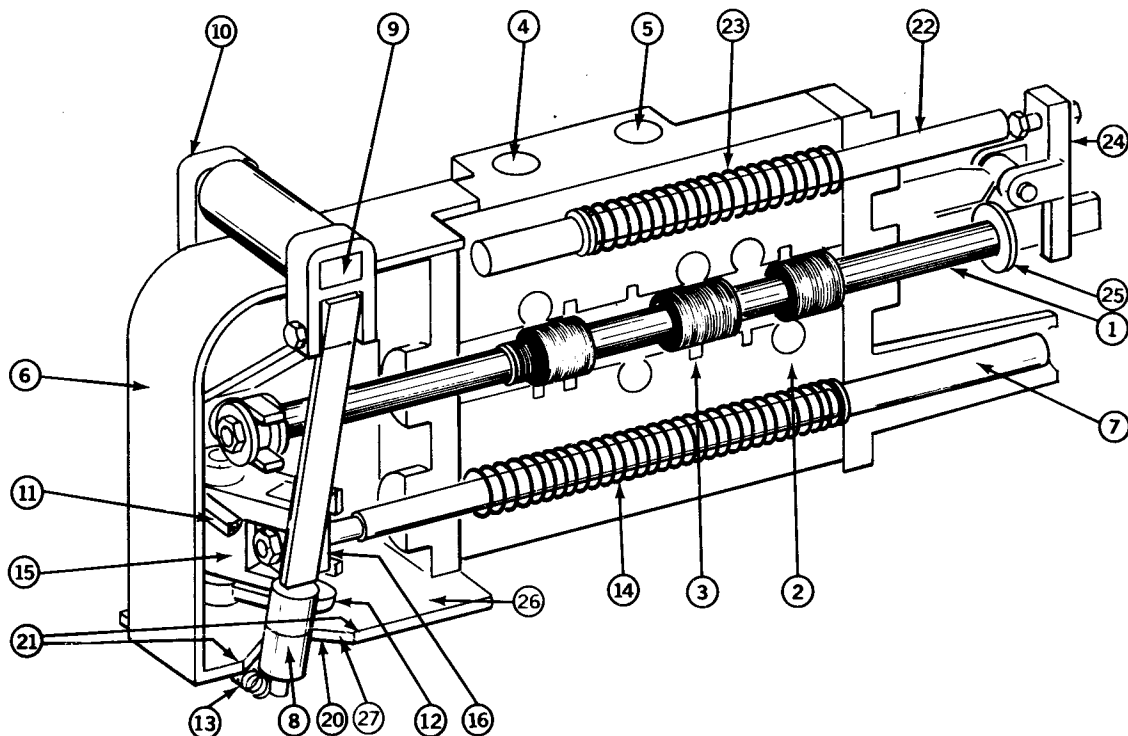
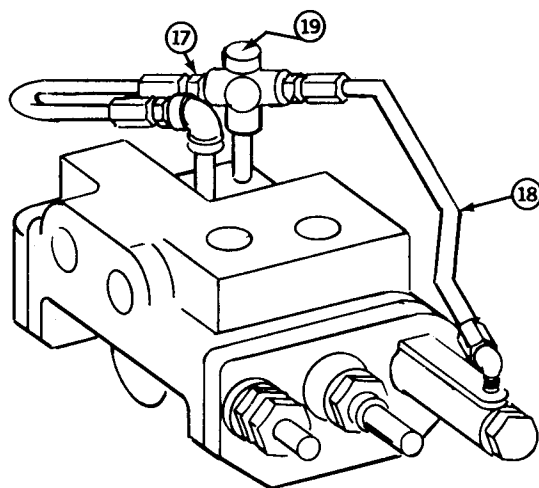
ALPHA MAIN OPERATING VALVE

DESCRIPTION

The Main Operating Valve is a pressure controlled single spool valve. It has an automatic spool reversing function and an automatic return to neutral function ("Knockout"). In the neutral position system fluid flows through the MOV and back to the hydraulic tank. When shifted, the MOV main spool initially diverts pump flow to the packer cylinder directional valve which controls the packer plate. After reversing, pump flow is diverted to the carrier cylinder directional valve which controls the carrier plate.

TERMS YOU NEED TO KNOW

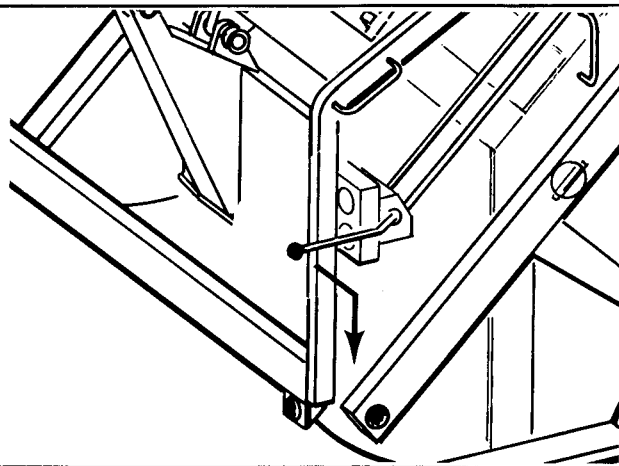
- | | |
|----------------------|----------------------|
| 1—Main spool | 14—Reversing spring |
| 2—"P" port | 15—Reversing yoke |
| 3—"T" port | 16—Square block |
| 4—#1 port | 17—Check valve |
| 5—#2 port | 18—Tubing |
| 6—Bridge assembly | 19—Oil jet |
| 7—Reversing plunger | 20—"V" |
| 8—Double roller arm | 21—Step |
| 9—Arm yoke pin | 22—Knock-out plunger |
| 10—Single roller arm | 23—Knock-out spring |
| 11—Reversing finger | 24—Knock-out pivot |
| 12—Trip finger | 25—Knock-out washer |
| 13—Roller arm spring | 26—Cam |
| | 27—Ramp |



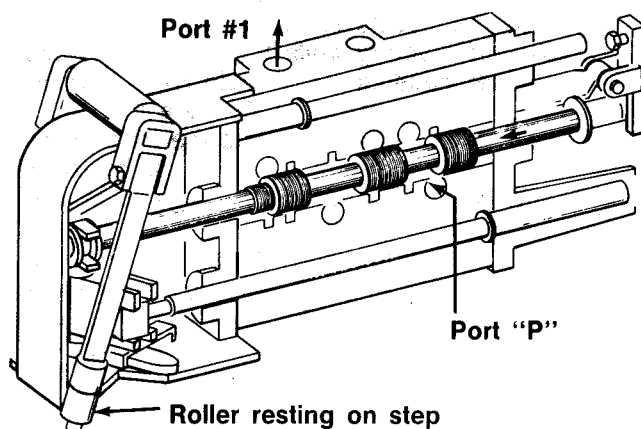
FIRST HALF OF THE PACKING CYCLE

To start the cycle the operating lever is shifted out and down.

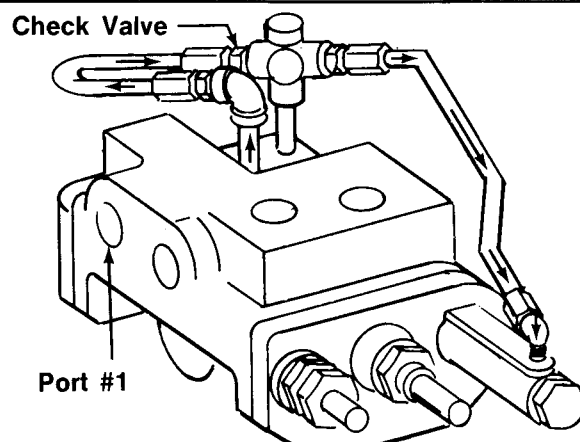
1. The MOV main spool and both the packer and carrier directional valves are shifted together.



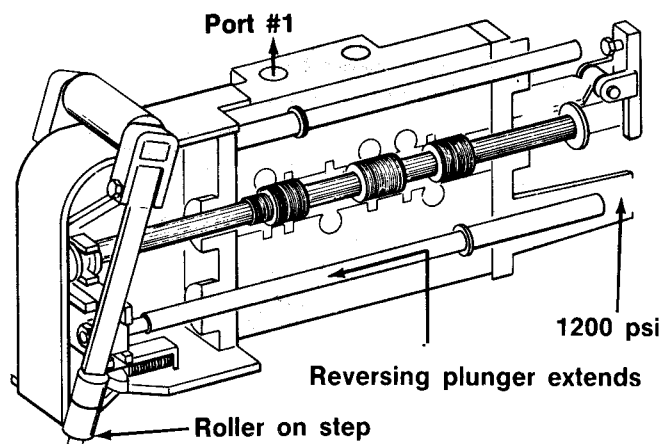
2. Movement of the main spool also pushes the double roller arm up the ramp to rest on the step of the cam.
3. Hydraulic fluid flows into port "P", out port #1, through the packer directional valve, and to the rod end of the packer cylinders. Return fluid is forced out of the case end of the packer cylinders and flows through the packer directional valve back to the hydraulic tank.
4. The packer cylinders retract to open the packer plate.



5. Hydraulic fluid from port #1 passes through an external check valve and is routed via tubing to the reversing plunger.

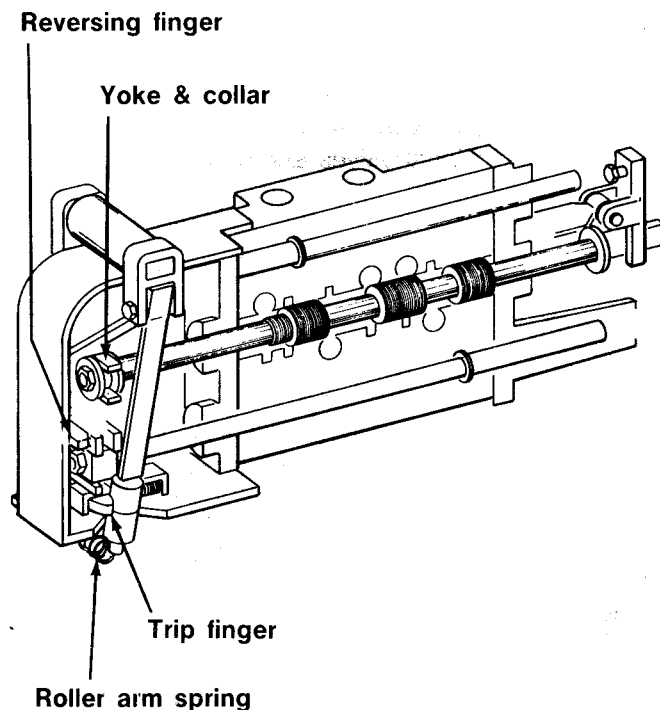


6. When the packing cylinders fully retract, system pressure increases. Since pressure is equal throughout the hydraulic system, pressure also builds behind the reversing plunger.

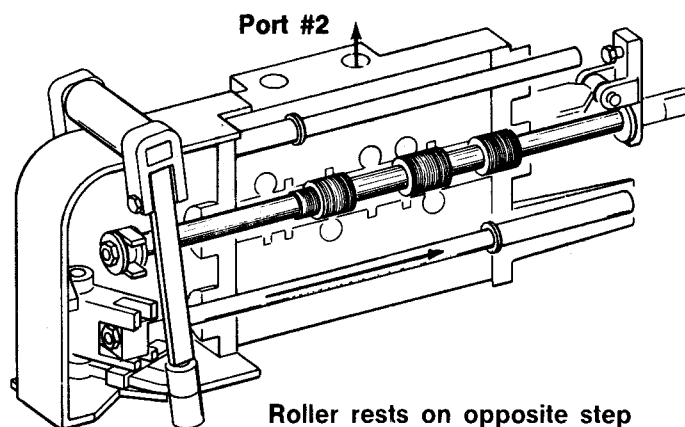


TROUBLESHOOTING

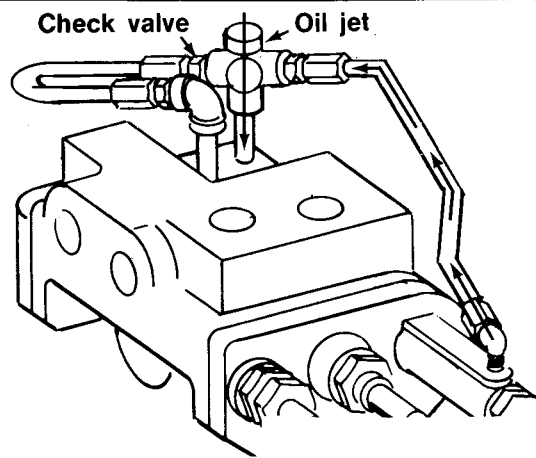
7. As the pressure behind the reversing plunger increases, the plunger gradually extends. At 1200 psi the plunger extension has compressed the reversing spring enough to start the reversing function.
 - a. The extending reversing plunger pushes the trip finger under the double roller arm.
 - b. The pivot block on the reversing plunger contacts the reversing finger. This contact causes the finger to pivot and push against the single roller arm.
 - c. Since the single roller arm is connected to the double roller arm the double roller arm is pushed off of the cam step.
 - d. Once the double roller is on the ramp the roller arm spring pulls the two roller arms together causing the double roller arm to settle into the bottom of the cam "V".
8. The main spool is connected to the roller arms by a yoke and collar, the movement of the roller arms into the bottom of the cam "V" also moves the main spool into the neutral position.
9. With the main spool in neutral, fluid flow is blocked to the packer cylinders and to the fully extended reversing plunger.



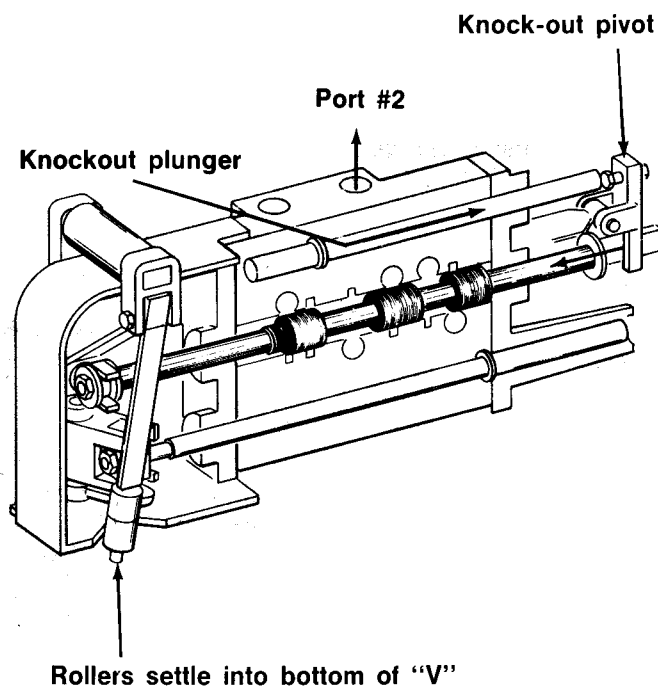
10. The reversing spring forces the reversing plunger back into the MOV housing. As the plunger retracts the trip finger pulls the double roller arm up the ramp to rest on the opposite step of the cam.



- a. Hydraulic fluid behind the plunger is forced back through the tubing and the check valve.
- b. The seated check valve forces the hydraulic fluid to flow through the oil jet and back to the hydraulic tank.
- c. The oil jet slows down the returning hydraulic fluid and thus slows down the movement of the reversing plunger.
- d. The force of the reversing spring moves the reversing plunger into the MOV housing and reverses the MOV main spool. The spring also reverses the operating lever linkage.



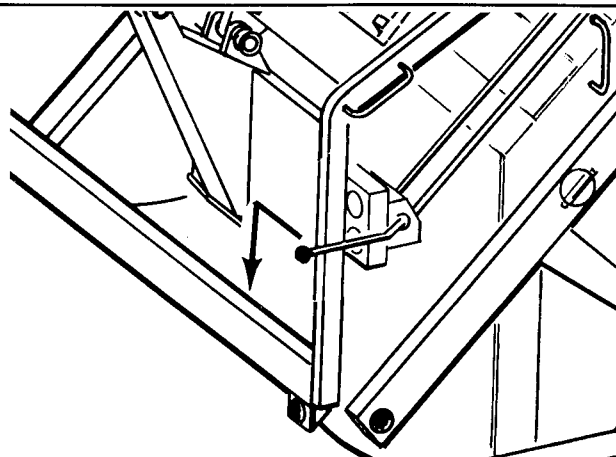
11. When the main spool reverses, it diverts fluid flow from port #1 to port #2. Fluid is routed through the carrier directional valve and regen valve to the case end of the carrier cylinders. Return fluid from the rod end of the carrier cylinders flows through the regen valve and the carrier directional valve and returns back to tank.
12. The carrier cylinders extend, moving the carrier plate down to the interrupted stop position.
13. When the carrier cylinders fully extend system pressure builds. Hydraulic fluid from port #2 is internally directed to the knockout plunger.
14. When the pressure behind the plunger is enough to overcome the force of the knockout spring, (1400 psi) the plunger extends and contacts the knockout pivot. The pivot pushes against the knockout washer on the main spool.
15. The movement of the main spool moves the double roller arm off the step and onto the ramp.
16. The roller arm spring pulls both double and single rollers together and they settle into the bottom of the cam "V".
17. The MOV has "knocked out" to natural. The packer plate is open and the carrier is down in the interrupted stop position.



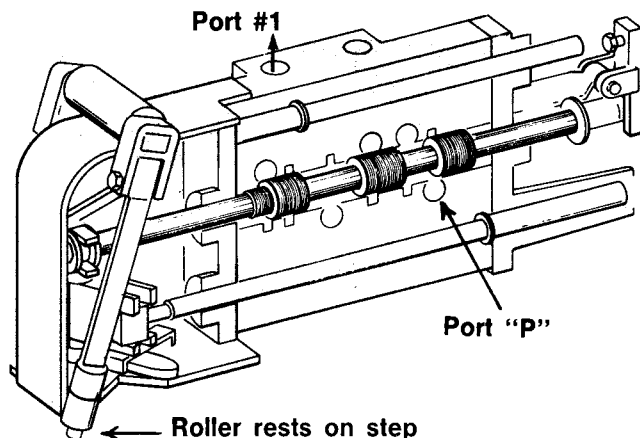
SECOND HALF OF PACKING CYCLE

To continue the cycle the operating lever is shifted in and down.

1. The MOV main spool is shifted exactly as it was in the first half of the cycle. Both the packer and carrier directional valves are shifted together but opposite the direction of the first half of the cycle.

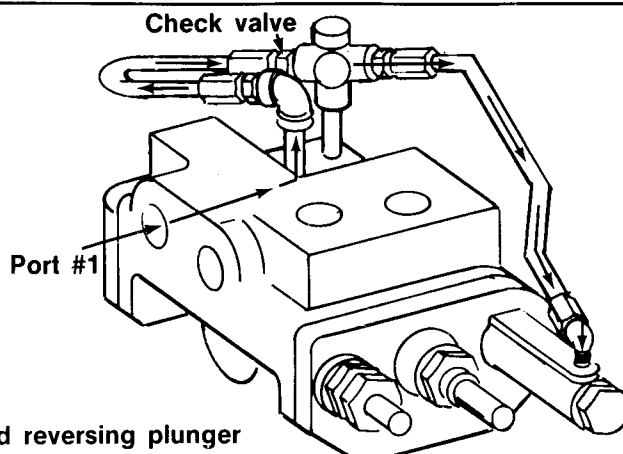


2. Movement of the main spool pushes the double roller arm up the ramp to rest on the cam step.
3. Hydraulic fluid flows into port "P", out port #1, through the packer directional valve, and on to the case end of the packer cylinders. Return fluid is forced out of the rod end of the packer cylinders and flows through the packer directional valve back to the hydraulic tank.
4. The packer cylinders extend causing the packer plate to sweep the hopper.



TROUBLESHOOTING

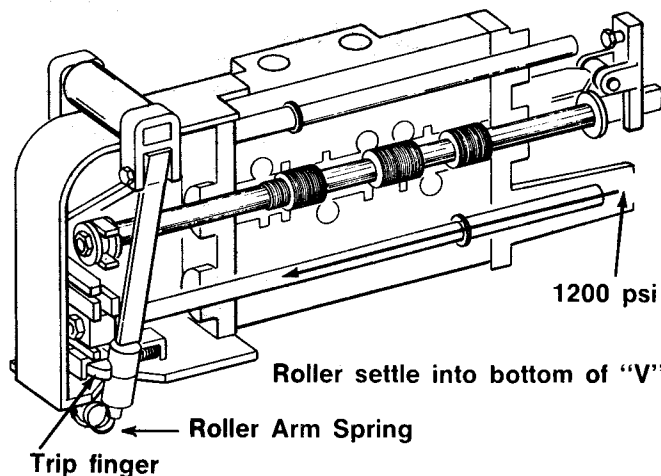
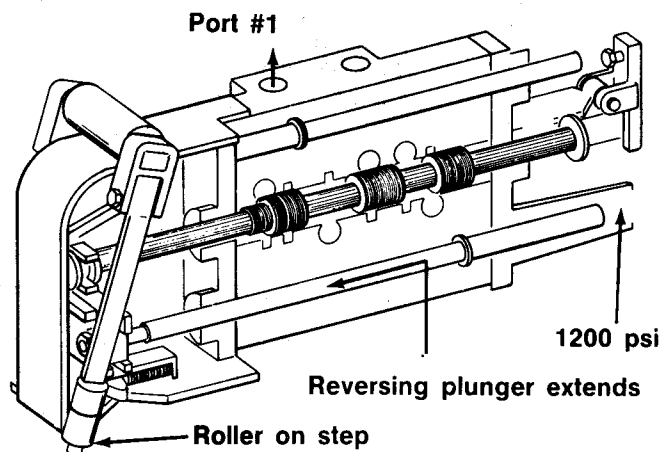
5. Hydraulic fluid from port #1 passes through an external check valve and is routed via tubing to the reversing plunger.



6. When the packer cylinders fully extend system pressure increases. Since pressure is equal throughout the hydraulic system, pressure also builds behind the reversing plunger.

7. As the pressure behind the reversing plunger increases the plunger gradually extends. At 1200 psi the plunger extension has compressed the reversing spring enough to start the reversing function.

- a. The extending reversing plunger pushes the trip finger under the double roller arm.
- b. The pivot block on the reversing plunger contacts the reversing finger. This contact causes the finger to pivot and push against the single roller arm.
- c. Since the single roller arm is connected to the double roller arm the double roller arm is pushed off the cam step.
- d. Once the double roller is on the ramp, the roller arm spring pulls the roller arms together causing the double roller arm to settle into the bottom of the cam "V".

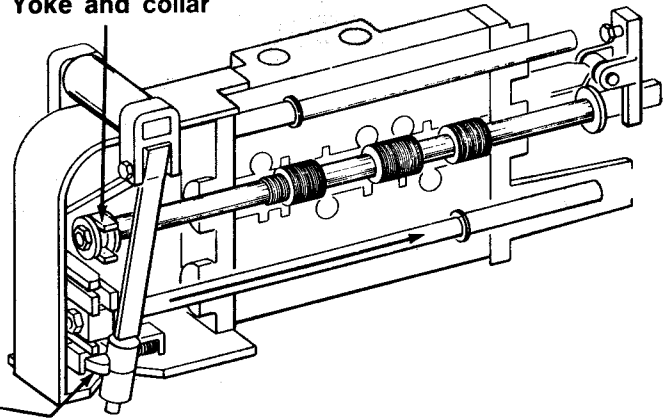


TROUBLESHOOTING

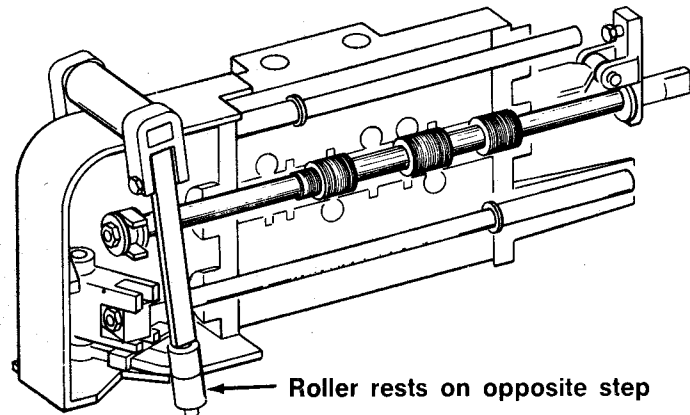
8. The main spool is connected to the roller arms by a yoke and collar, the movement of the roller arms into the bottom of the cam "V" also moves the main spool into the neutral position.
9. With the main spool in neutral, fluid flow is blocked to the packer cylinders and to the fully extended reversing plunger.

Trip finger

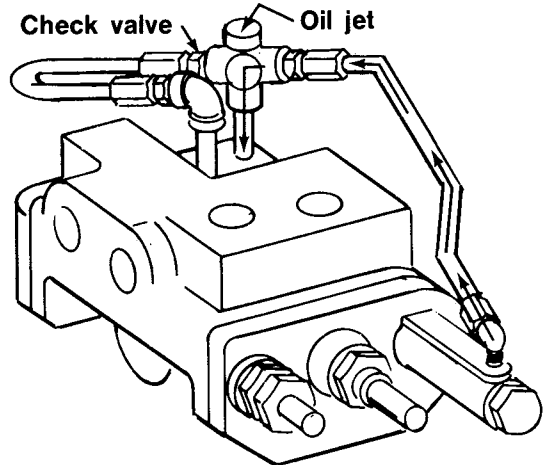
Yoke and collar



10. The reversing spring forces the reversing plunger back into the MOV housing. As the plunger retracts, the trip finger pulls the double roller arm up the ramp to rest on the opposite step.
 - a. Hydraulic fluid behind the plunger is forced back through the tubing and the check valve.
 - b. The seated check valve forces the hydraulic fluid to flow through the oil jet and back to the hydraulic tank.
 - c. The oil jet slows down the returning hydraulic fluid and thus slows down the movement of the reversing plunger.
 - d. The force of the reversing spring moves the reversing plunger into the MOV housing and reverses the MOV main spool. The spring also reverses the operating lever linkage.
11. When the main spool reverses it diverts fluid flow from port #1 to port #2. Fluid is routed through the carrier directional valve and regen valve on to the rod end of the carrier cylinders. Return fluid from the case end of the carrier cylinders flows through the carrier directional valve and regen valve and returns back to the hydraulic tank.
12. The carrier cylinders retract and the carrier plate moves up.
13. When the carrier cylinders fully retract and system pressure builds, hydraulic fluid from port #2 is internally directed to the knockout plunger.
14. When the pressure behind the plunger is enough to overcome the force of the knockout spring (1400 psi) the plunger extends and contacts the knockout pivot. The pivot pushes against the knockout washer on the main spool.
15. The movement of the main spool moves the double roller arm off the step and onto the ramp.
16. The roller arm spring pulls both double and single rollers together and they settle into the bottom of the cam "V".
17. The MOV has "knocked out" to neutral. The packer plate is closed, and the carrier is up in the "home" position unless it was stopped short by the resistance of the compacted trash within the body.

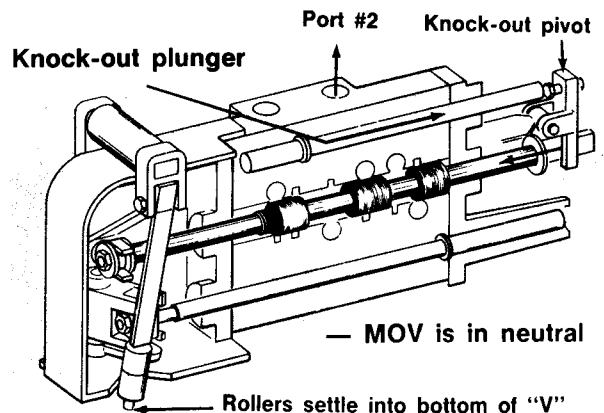


Roller rests on opposite step



Check valve

Oil jet



Port #2

Knock-out pivot

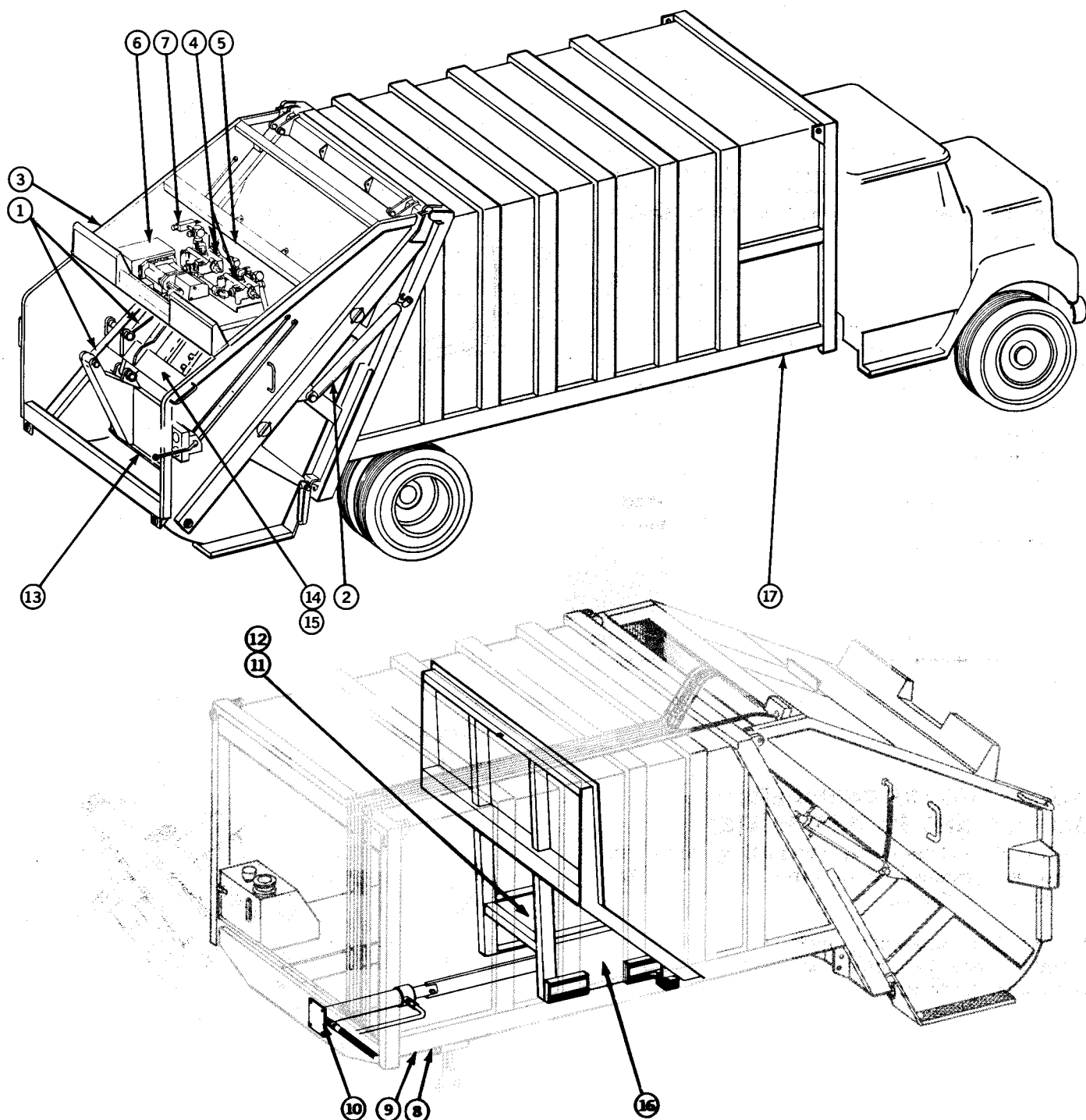
Knock-out plunger

— MOV is in neutral

Rollers settle into bottom of "V"

SECTION 8 TROUBLESHOOTING

MAIN COMPONENT LOCATION



1. OPERATING CYLINDERS
2. TAILGATE LIFT CYLINDERS
3. TAILGATE ASSEMBLY
4. SINGLE-SPOOL DIRECTIONAL VALVES
5. REGEN VALVE
6. MAIN OPERATING VALVE (MOV)
7. PACKER CYLINDER RELIEF VALVE
8. 2-SPOOL DIRECTIONAL VALVE
9. SEQUENCE PILOT CHECK (SPC) VALVE

10. PUSHOUT CYLINDER
11. CLAMP MECHANISM
12. CLAMP CYLINDER
13. PACKER PLATE
14. CARRIER PLATE
15. ROLLERS
16. PUSHOUT PLATE
17. PUMP



SERVICE AND REPAIR

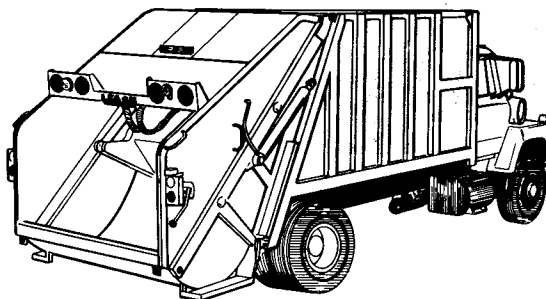
GENERAL

This section contains instructions necessary for the repair and replacement of the main components of the Alpha.

Before attempting any repair of the unit, become thoroughly familiar with the OPERATION instructions (Sec. 3) and GENERAL REPAIR PRACTICES (Sec. 4). Also, before performing any work on the unit know and OBSERVE all SAFETY PRECAUTIONS listed in Section 2 and Section 4.

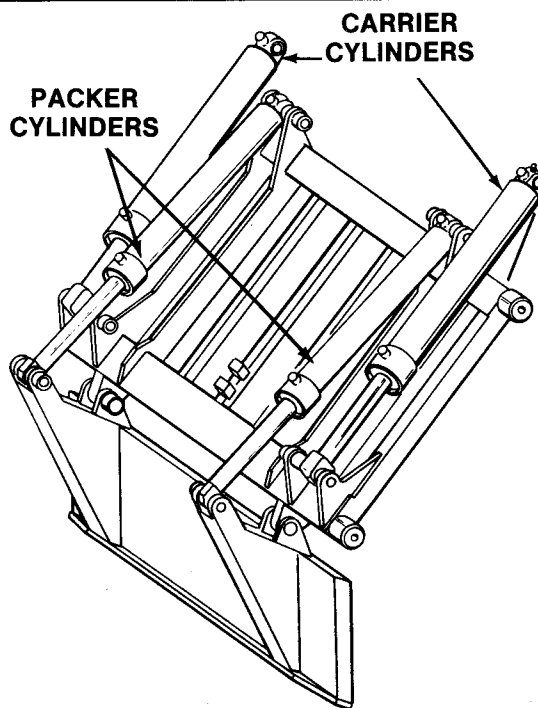
⚠ WARNING

There are some procedures in this section that will require that the truck is running. In these instances the operational status will be indicated. Otherwise, make sure that the truck is shut off and the keys are removed. The pressure of the hydraulic system and resulting movement of unit parts can cause serious injury or death.

**DESCRIPTION OF CYLINDERS
(CARRIER AND PACKER PLATE)**

The two (2) double-acting hydraulic cylinders that control the movement of the carrier plate are called the "carrier" cylinders.

The two (2) double-acting hydraulic cylinders that control the movement of the packer plate are called the "packer" cylinders.



TEST FOR LEAKING PACKER PLATE CYLINDERS

NOTE

Before testing any cylinder, make sure the main relief pressure is at 1650 PSI as described under MAIN RELIEF PRESSURE CHECK, Sec. 7, CHECKOUT PROCEDURES

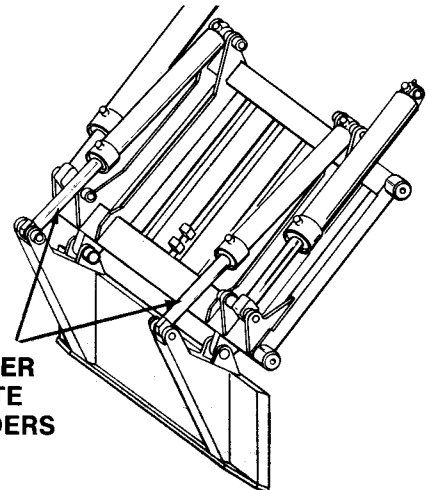
Operational Status			
Truck	Off	Keys	Removed

1. Remove the main topsheets over the cylinders for better accessibility during testing.

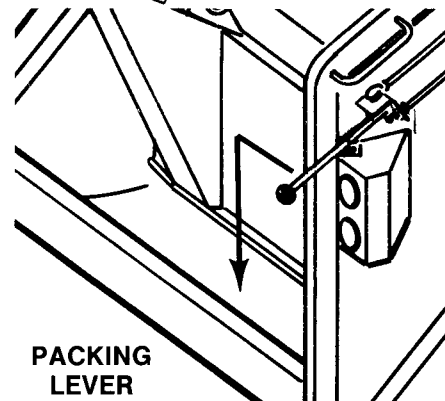
Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

2. Shift the packing lever (in and down) to fully extend the packer plate cylinders.

PACKER PLATE CYLINDERS



PACKING LEVER

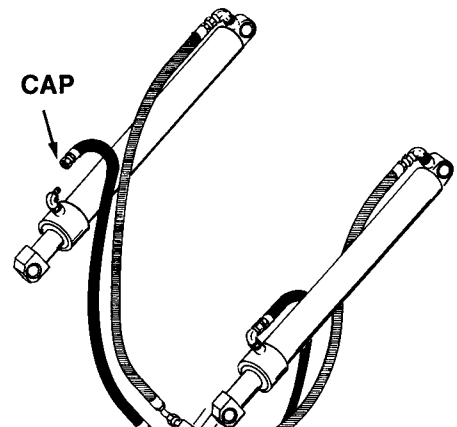


CAUTION

Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.

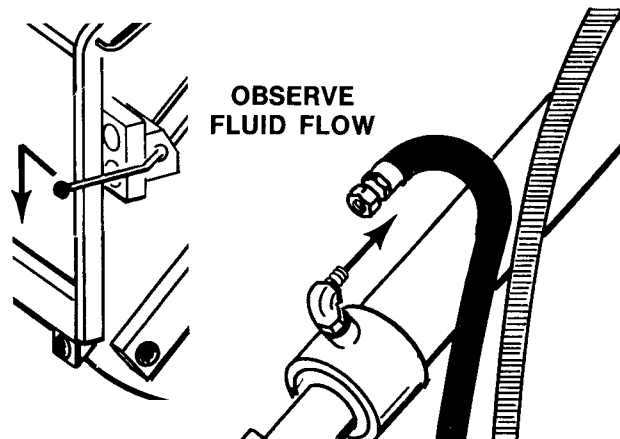
Operational Status			
Truck	Off	Keys	Removed

3. Disconnect and cap the hydraulic line to the rod end of one cylinder at a time.



Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

4. Shift the packing lever (in and down) to apply hydraulic pressure to the case end of the packer plate cylinders. Hold the lever and observe the fluid flow from the open port on the rod end. The flow of hydraulic fluid should be no more than 12 fluid ounces per minute. A flow greater than 12 ounces indicates an excessive piston seal leak. If the cylinder does not leak excessively, continue the test.



SERVICE AND REPAIR

Operational Status

Truck	Off	Keys	Removed
-------	-----	------	---------

- Reconnect the hydraulic line to the rod end of the cylinder. Repeat steps 3 - 5 for the other cylinder.

Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
-------	---------	-----	---------	----------	----

- Shift the packing lever (out and down) to retract the packer plate cylinder (to the "interrupted-cycle" position).

Operational Status

Truck	Off	Keys	Removed
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- Disconnect and cap the hydraulic line which connects to the case end of the packer plate cylinder.

Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
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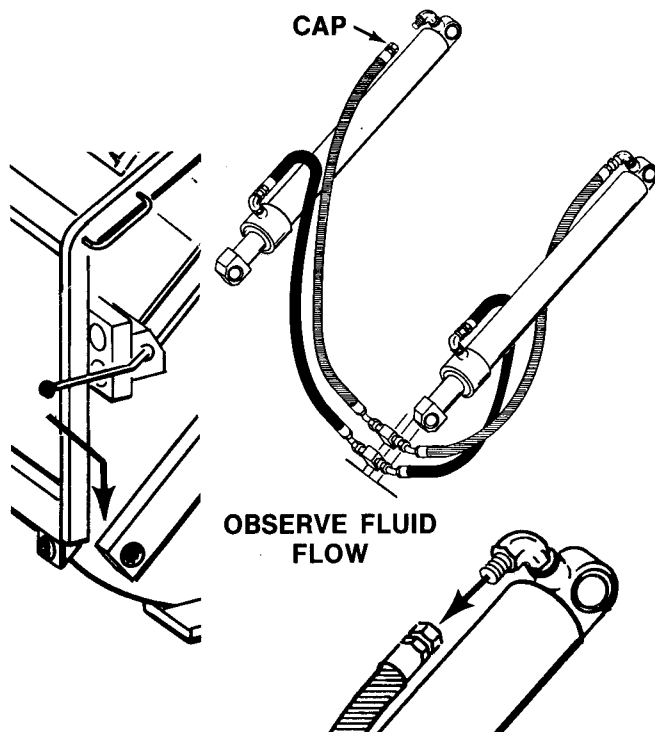
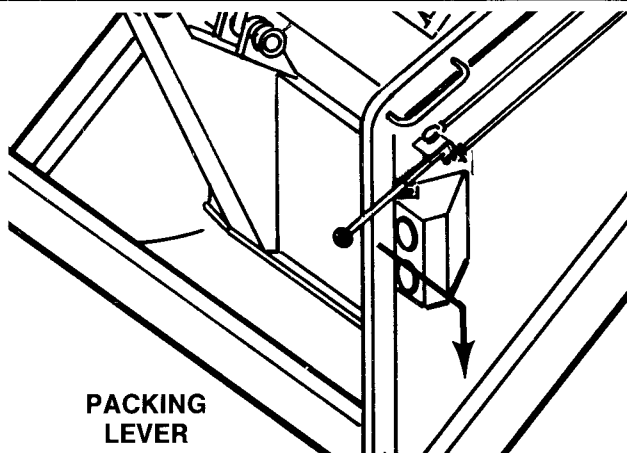
- Shift the lever (out and down) to apply hydraulic pressure to the rod end of the packer plate cylinder. Hold the lever and observe the fluid flow from the port on the case end of the cylinder.

The flow of hydraulic fluid should be no more than 12 fluid ounces per minute. A flow greater than 12 ounces indicates an excessive piston seal leak. Disassemble the cylinder and replace the piston seal as described later in this section.

Operational Status

Truck	Off	Keys	Removed
-------	-----	------	---------

- If the cylinder does not leak excessively, reconnect the hydraulic line to the cylinder. Repeat steps 7 - 9 for the other cylinder.



CAUTION

Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.

TEST FOR LEAKING CARRIER PLATE CYLINDERS

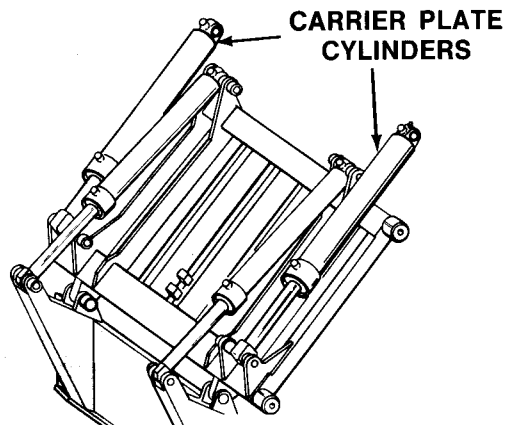
NOTE

Before testing any cylinder, make sure the main relief pressure is at 1650 PSI as described under MAIN RELIEF PRESSURE CHECK, Sec. 7, CHECKOUT PROCEDURES.

Operational Status

Truck	Off	Keys	Removed
-------	-----	------	---------

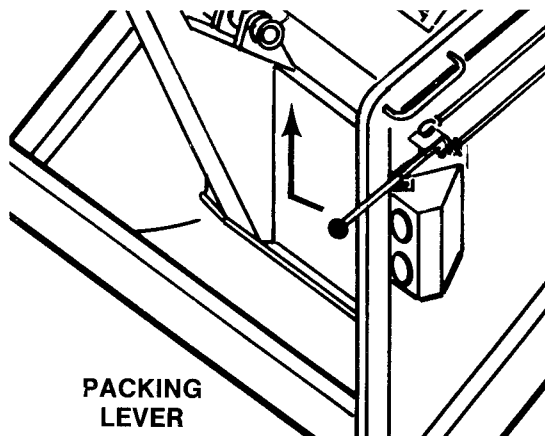
- Remove the topsheets for better accessibility during the testing.



Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
-------	---------	-----	---------	----------	----

- Shift the packing lever (in and up) to fully retract the carrier plate cylinders (to the "home" position).



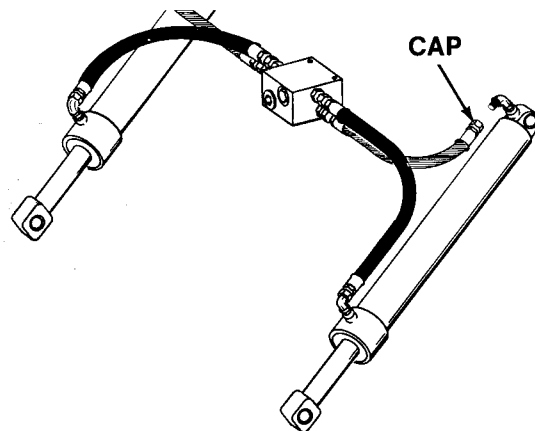
Operational Status

Truck	Off	Keys	Removed
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- Disconnect and cap the line to the case end of one cylinder at a time.

CAUTION

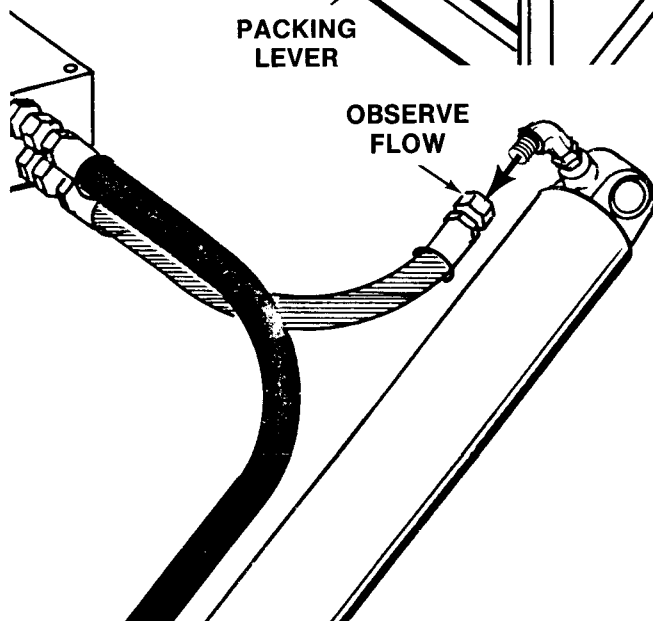
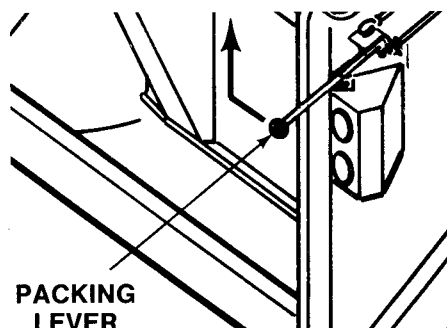
Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.



Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
-------	---------	-----	---------	----------	----

- Shift the packing lever (in and up) to apply hydraulic pressure to the rod end of the carrier cylinders. Hold the lever and observe the fluid flow from the open port on the case end of the cylinder. The flow of hydraulic fluid should be no more than 12 fluid ounces per minute. A flow greater than 12 ounces indicates an excessive piston seal leak. Disassemble the cylinder and replace the piston seal as described later in this section.



Operational Status

Truck	Off	Keys	Removed
-------	-----	------	---------

- If the cylinder does not leak excessively, reconnect the hydraulic line to the rod end of the cylinder. Repeat steps 3-5 for the other cylinder.

SERVICE AND REPAIR

Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
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- Shift the packing lever (out and up) to extend the carrier plate cylinder.

Operational Status

Truck	Off	Keys	Removed
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- Disconnect and cap the hydraulic line which connects to the rod end of the carrier plate cylinder.

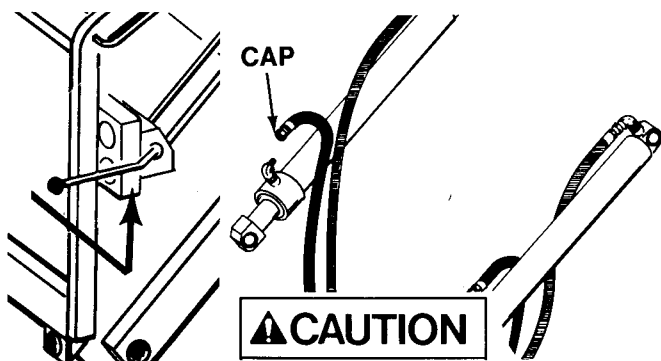
Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
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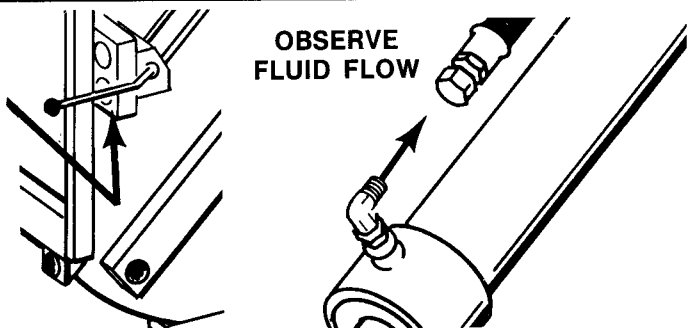
- Shift the lever (out and up) to apply hydraulic pressure to the case end of the carrier cylinder. Hold the lever and observe the fluid flow from the port on the cylinder. The flow of hydraulic fluid should be no more than 12 fluid ounces per minute. A flow greater than 12 ounces indicates an excessive piston seal leak.

Operational Status

Truck	Off	Keys	Removed
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Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.



- If the cylinder does not leak excessively, re-connect the hydraulic line to the case end of the carrier plate cylinder. Repeat steps 7 - 9 for the other cylinder.

REMOVAL OF PACKER PLATE CYLINDERS

Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
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- Position the packer plate to the "interrupted cycle" position and then sweep the packer plate to the vertical position.

Operational Status

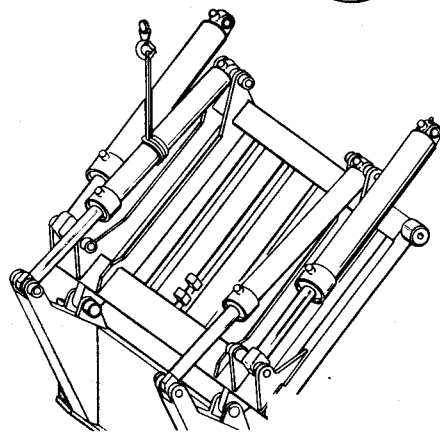
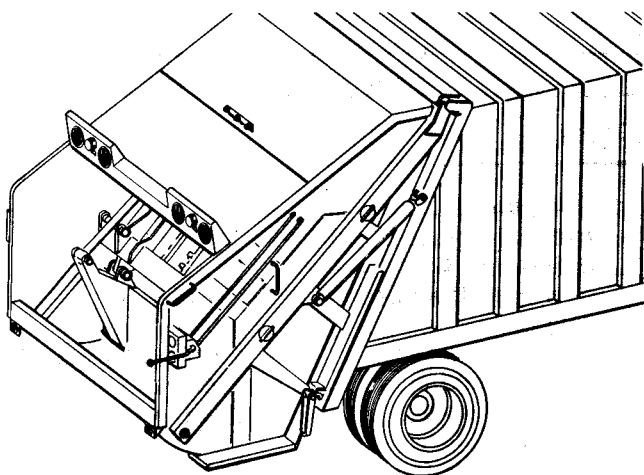
Truck	Off	Keys	Removed
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- Remove the topsheets to provide better accessibility to the packer plate.

NOTE

See Section 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

- Secure a nylon sling around the cylinder as shown and attach to a suitable lifting device with a minimum lifting capacity of 500 lbs. Operate the hoist to snug the lifting sling without applying strain on the cylinder.



Operational Status

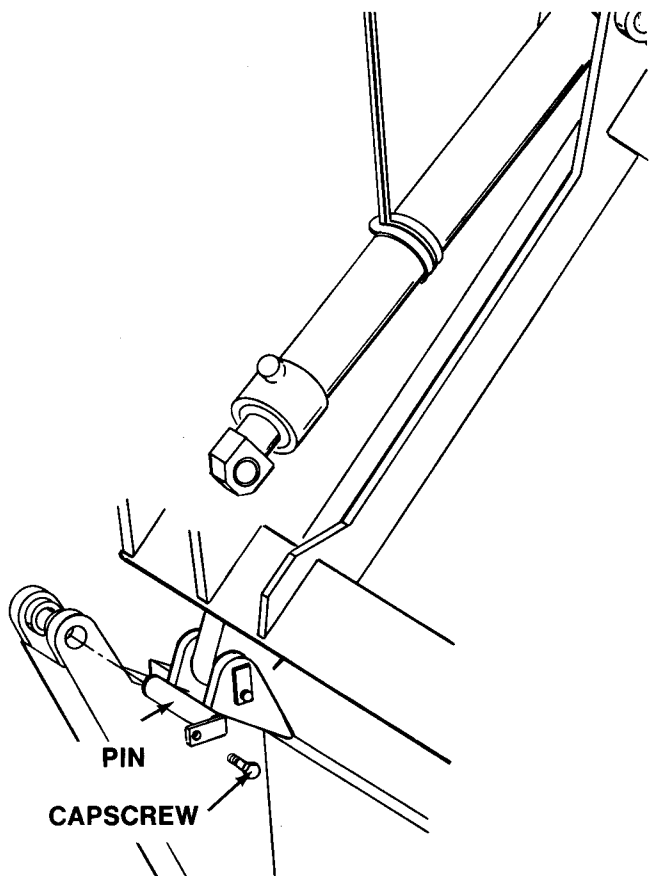
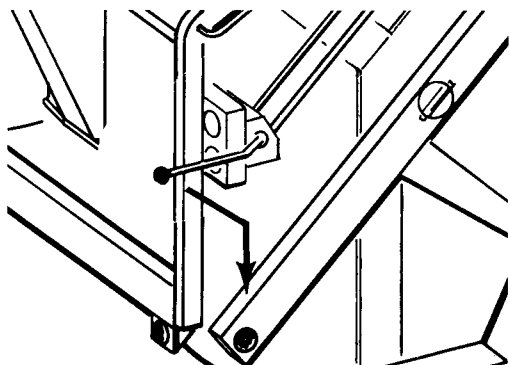
Truck	Off	Keys	Removed
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4. Remove the capscrew from the rod end pin retainer.
5. Make sure the cylinder weight is securely supported by the hoist and carefully remove the pivot pin. Check for pivot pin or pin hub wear.

Operational Status

Truck	Running	PTO	Engaged	Sol. Sw. OFF
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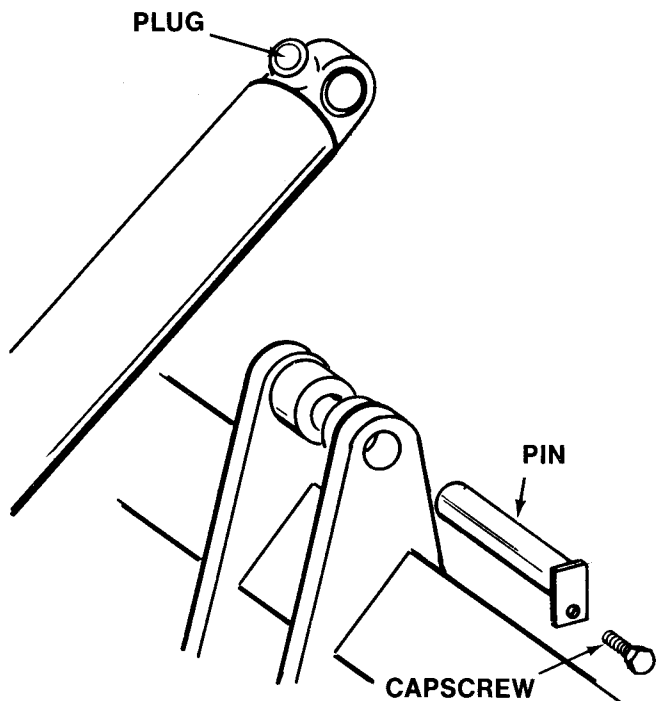
6. Slowly operate the packing lever (out and down) to completely retract the cylinder.



Operational Status

Truck	Off	Keys	Removed
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7. Disconnect both the case end and rod end hoses. Immediately cap or plug the hoses and cylinder ports to keep fluid in, and dirt out.
8. Remove the capscrew from the case end.
9. Remove the pivot pin by using pin puller (See Section 11, SERVICE TOOLS).
10. Check for pivot pin or pin hub wear.

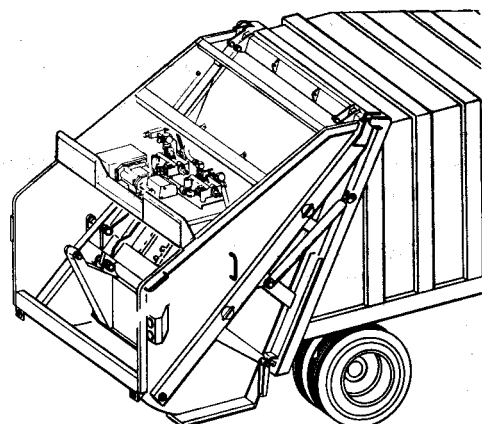


SERVICE AND REPAIR

REMOVAL OF CARRIER PLATE CYLINDERS

Operational Status			
Truck	Off	Keys	Removed

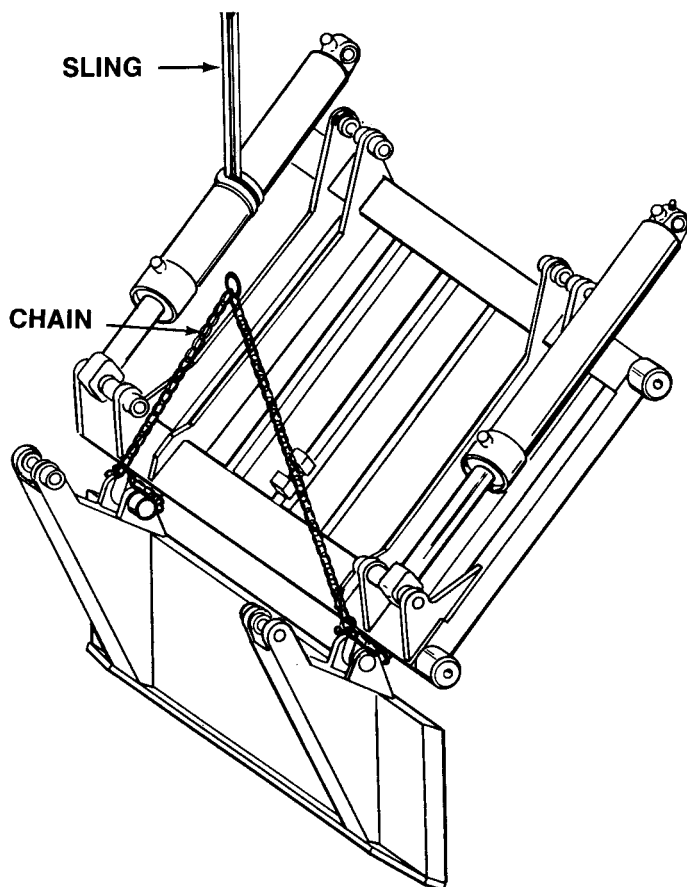
1. Remove the topsheets, to provide better accessibility.



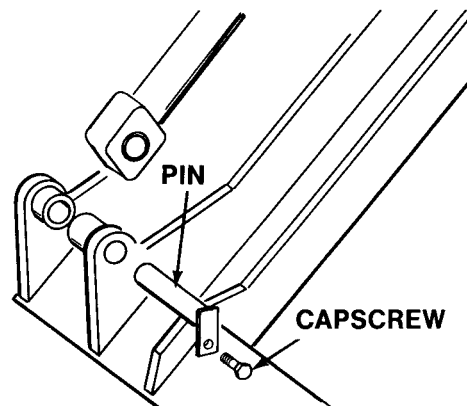
NOTE

See Section 4, *GENERAL REPAIR PRACTICES*, for more detailed information about the correct use of slings and lifting chains.

2. Secure a chain to the lower end of the carrier plate. Attach the other end to a suitable lifting device with a minimum lifting capacity of 1,600 lbs. Adjust the hoist so that it will support the plate once the carrier cylinders are removed.



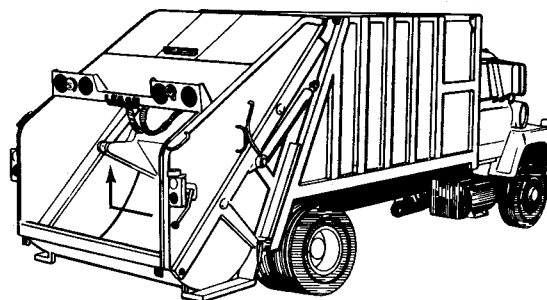
3. Once the carrier plate has been securely supported, secure a nylon sling around the carrier cylinder and attach to a lifting device with a minimum lifting capacity of 500 lbs. Operate the hoist to snug the lifting sling without applying strain to the cylinder.
4. Remove the capscrew from the rod end. Carefully remove the pivot pin. Use special pin puller (See Section 11, *SERVICE TOOLS*).



SERVICE AND REPAIR

Operational Status			
Truck	Running	PTO Engaged	Sol. Sw. OFF

- Slowly operate the packing lever (in and up) to completely retract the carrier cylinder piston rod. This will provide enough clearance to remove the cylinder.



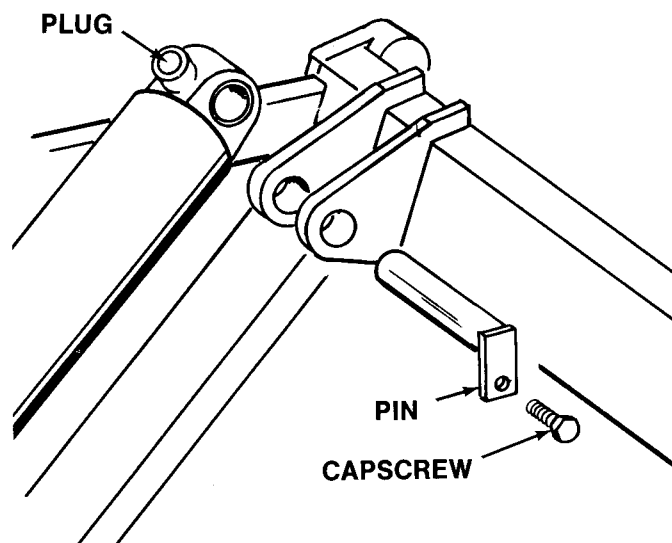
**PACKING
LEVER**

Operational Status			
Truck	Off	Keys	Removed

- Disconnect both the case end and rod end hoses from the carrier cylinder. Immediately cap the hoses and plug the cylinder ports to keep fluid in and dirt out.
- Remove the capscrew from the case end pin retainer.
- Carefully remove the pivot pin and lift out the cylinder assembly.
- Check for pivot pin or pin hub wear.

NOTE

If the cylinder is not to be installed immediately, keep the ports sealed to prevent dirt from entering the cylinder.



SERVICE AND REPAIR

DISASSEMBLY OF CYLINDERS

(Carrier and Packer Plate) BEFORE SERIAL NUMBER 2041

1. Remove grease fitting, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Section 4, General Repair Practices, before proceeding to disassemble the cylinder.
2. Secure the case end of the cylinder to the floor or workbench.
3. Secure the rod end of the cylinder to an overhead hoist device with a minimum lifting capacity of 500 lbs.
4. Remove the six (6) capscrews and lockwashers and three (3) lock segments securing the head gland to the cylinder.

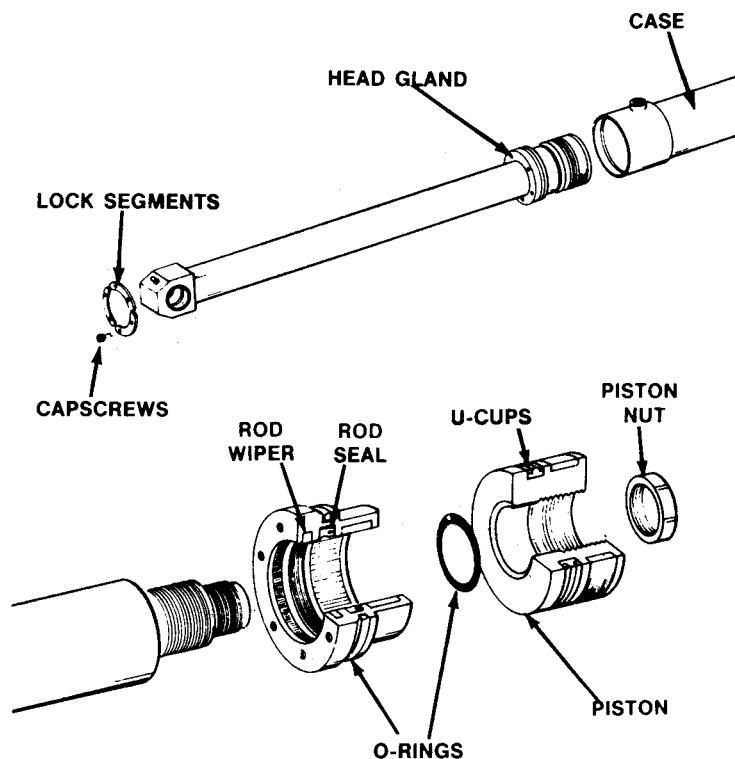
NOTE

Use an electric drill with an internal grinding wheel to remove any burrs from the internal groove on the cylinder case. Otherwise the cylinder may be difficult to take apart.

5. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.

NOTE

While the packer and carrier cylinders are different sizes, the disassembly procedures are the same.



INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.
2. A new rod wiper, rod seal, O-rings, and U-cups must be installed anytime the cylinder is disassembled. Pay particular attention to the way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

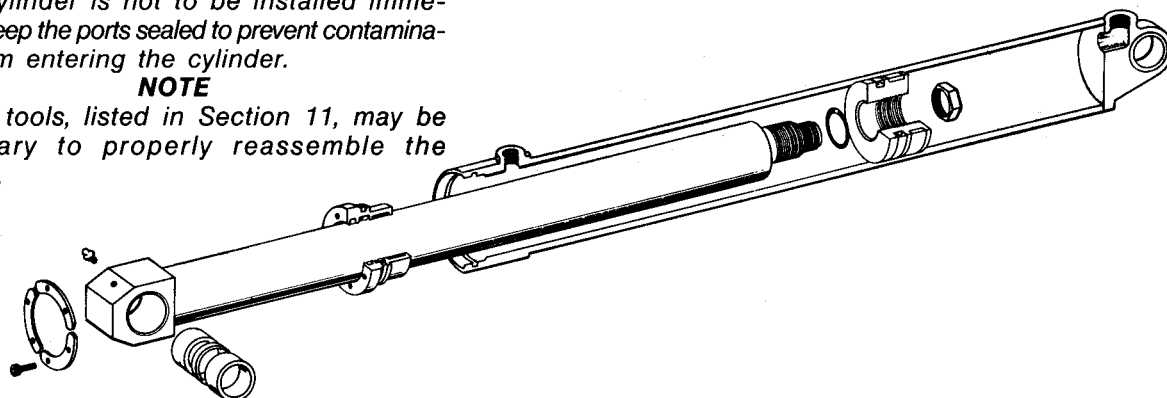
Reassemble and install the cylinder in the approximate reverse order of disassembly.

NOTE

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.

NOTE

Special tools, listed in Section 11, may be necessary to properly reassemble the cylinder.



DISASSEMBLY OF PACKER PLATE CYLINDERS AFTER SERIAL NUMBER 2040

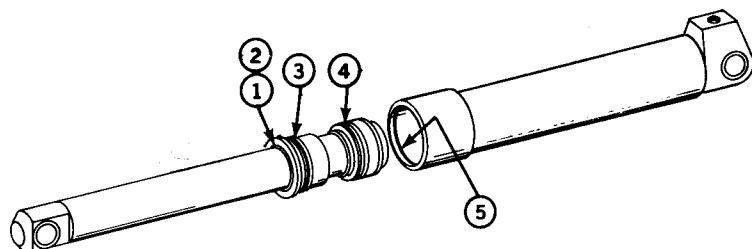
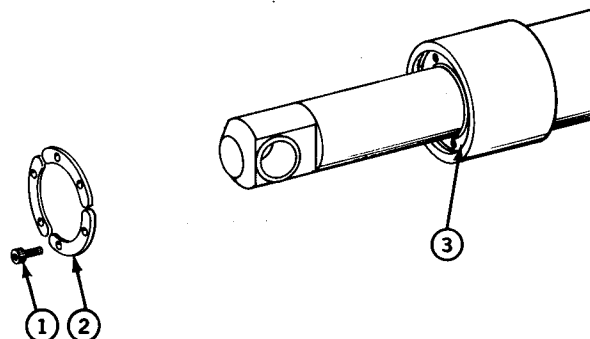
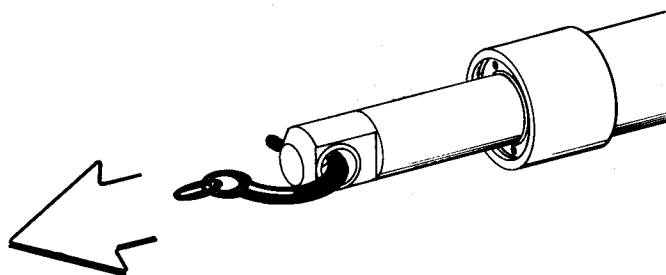
1. Remove grease fittings, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Sec. 4, GENERAL REPAIR PRACTICES before proceeding to disassemble the cylinder.
2. Secure the case end of the cylinder to the floor or workbench.
3. Secure the rod end of the cylinder to an overhead hoist or other suitable lifting mechanism with a minimum lifting capacity of 500 lbs.
4. Remove the six nylock screws (1) and three lock segments (2) securing the head gland (3) to the cylinder.
5. Slowly operate the hoist to carefully pull the piston rod assembly out of the cylinder.
6. Disassemble the cylinder and install replacement parts.

NOTE

During disassembly note the condition of each part as it is removed to aid in diagnosing. Note the position of each part as it is removed to aid in reassembly.

INSPECTION AND REPLACEMENT OF OPERATING CYLINDERS

1. Carefully and thoroughly inspect the inside of the cylinder for cracks, scoring, or uneven wear. Check all parts for damage.
2. Use an electric drill with an internal grinding wheel to remove burrs from the internal groove on the cylinder case (5).
3. A new rod wiper (1), rod seal (2), o-ring (3) and u-cups (4) must be installed anytime the cylinder is disassembled. Pay particular attention to the way parts are positioned for correct assembly. Parts that must be replaced together are available as a repair kit from your authorized Leach distributor.

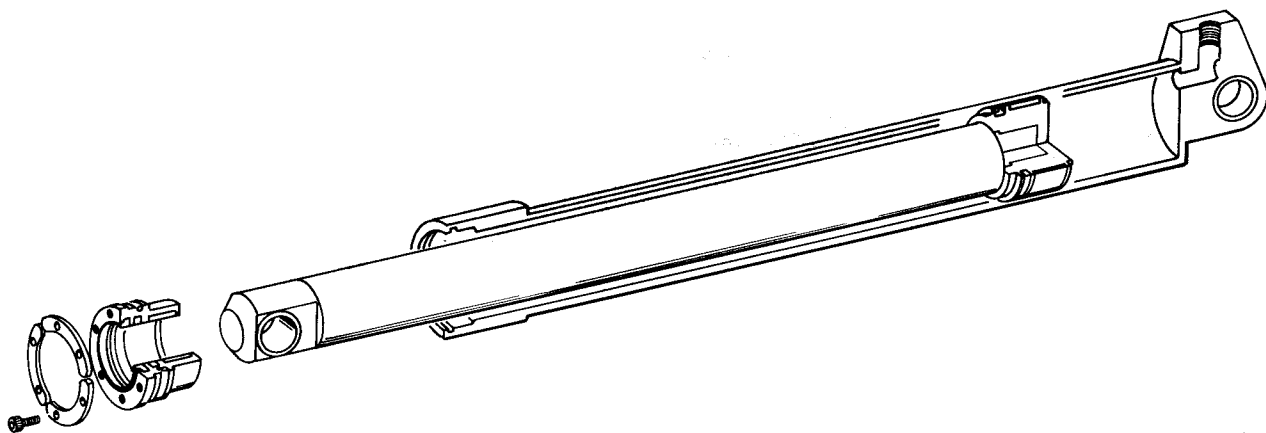


**REASSEMBLY AND INSTALLATION OF
PACKER PLATE CYLINDERS**

Reassemble and install the operating cylinders in the approximate reverse order of disassembly.

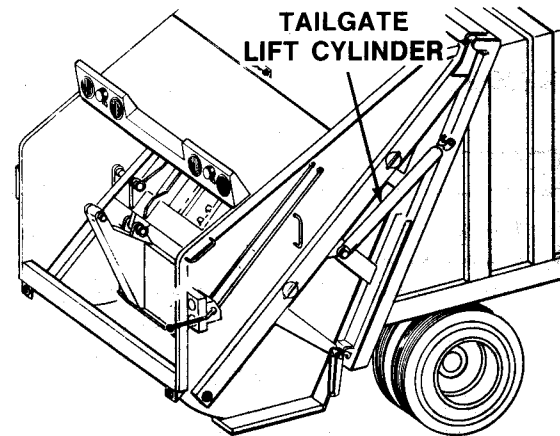
NOTE

The special u-cups guide listed in Sec. 11, SERVICE TOOLS, must be used to start the piston rod into the cylinder for reassembly.



DESCRIPTION OF TAILGATE LIFT CYLINDERS

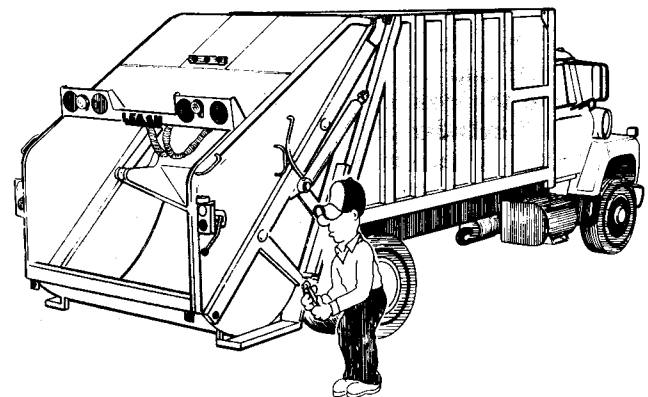
These two hydraulically operated cylinders, mounted on each side of the tailgate, lift and lower the tailgate assembly. The rod end is pinned to a pivot ear on the body frame near the discharge opening, while the cylinder weldment pivot ear is bolted to a mounting hub on the tailgate.



TEST FOR LEAKING TAILGATE CYLINDER

NOTE

This check will require two people.



Operational Status

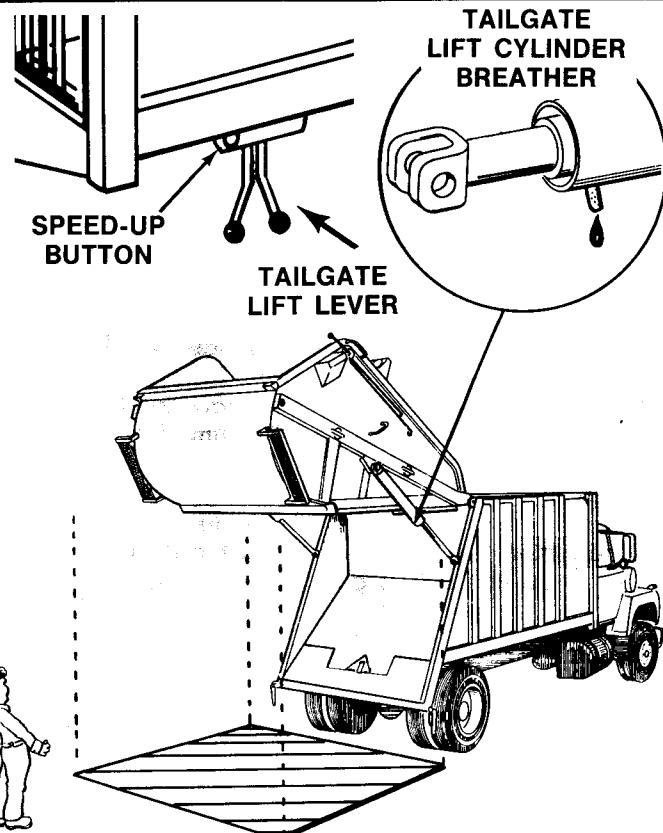
Truck	Off	Keys	Removed
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1. Loosen and release (swing away) the tailgate clamps.

Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
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2. Depress the speed-up button and pull the tailgate lift lever to raise the tailgate and hold.
3. (Second person) Observe the breather in both cylinders for fluid leakage. A slight leak that soon stops is not critical. A steady leak greater than 12 ounces per minute requires a new piston seal — proceed to tailgate cylinder removal and disassembly.



SERVICE AND REPAIR

REMOVAL OF TAILGATE LIFT CYLINDERS

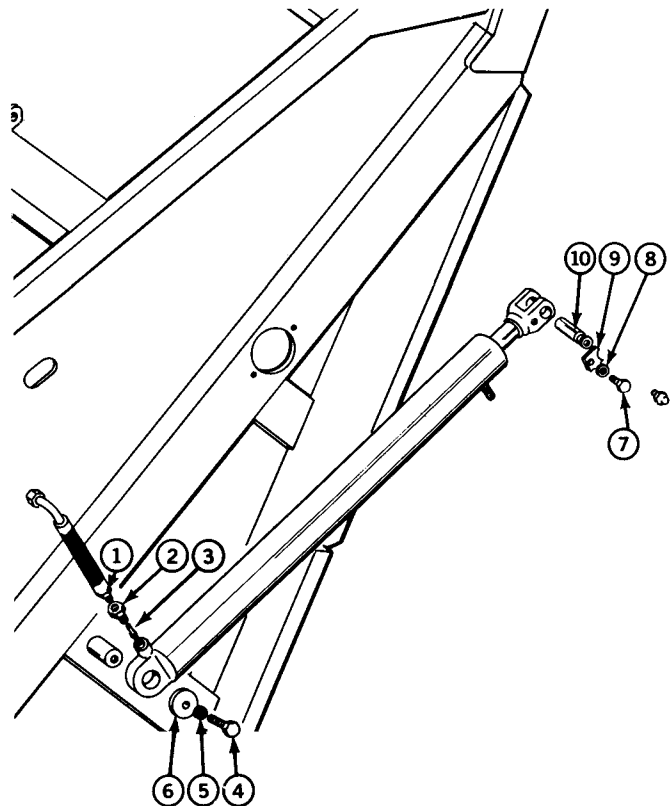
Operational Status			
Truck	Off	Keys	Removed

1. With the tailgate closed attach a sling connected to a suitable lifting device with a minimum lifting capacity of 500 lbs., to the tailgate lift cylinder.

NOTE

See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

2. Disconnect the hydraulic line (1) at the cylinder base and cap the line.
3. Remove the adaptor (2), restriction pin (3) and plug the cylinder port.
4. Remove the capscrew (4), washer (5) and retainer (6) from the cylinder end.
5. Remove the capscrew (7), lockwashers (8), retainer (9) and pin (10).

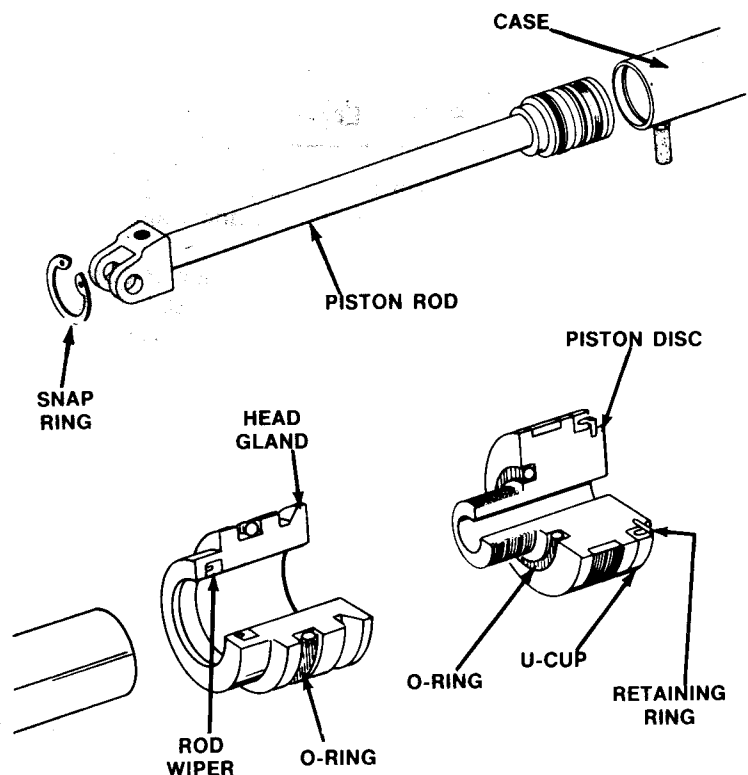


DISASSEMBLY OF TAILGATE CYLINDER

1. Remove grease fittings, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Section 4, General Repair Practices, before proceeding to disassemble the cylinder.
2. Secure the case end of the cylinder to the floor or workbench.
3. Secure the rod end of the cylinder to an overhead lifting device with a minimum lifting capacity of 500 lbs.
4. Remove the snap ring.
5. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.
6. Unscrew the piston disc from the rod and remove the head gland.
7. Remove the rod seal, O-ring, second O-ring and U-cup.

NOTE

On earlier units remove the cup holder and then the U-cup.



SERVICE AND REPAIR

INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.
2. A new rod wiper, rod seal, O-rings, and U-cup must be installed anytime the cylinder is disassembled. Pay particular attention to the way the parts are positioned before disassembly.
3. Check to make sure the breather is not plugged.

All Leach Company rear loader refuse unit tailgate lift cylinders are now Nitrocarburized. This process greatly enhances the longevity of tailgate lift cylinder rods and inside tailgate lift cylinder casings by improving resistance to corrosion. Nitrocarburizing yields several unique characteristics. The cylinder rod is furnished with an attractive black finish, which unlike chrome, becomes smoother with use.

NOTE

With use it is possible that Nitrocarburized components may turn various shades of white and may appear "streaked." This condition is normal and does **not** affect cylinder performance or serviceability.

REASSEMBLY AND INSTALLATION

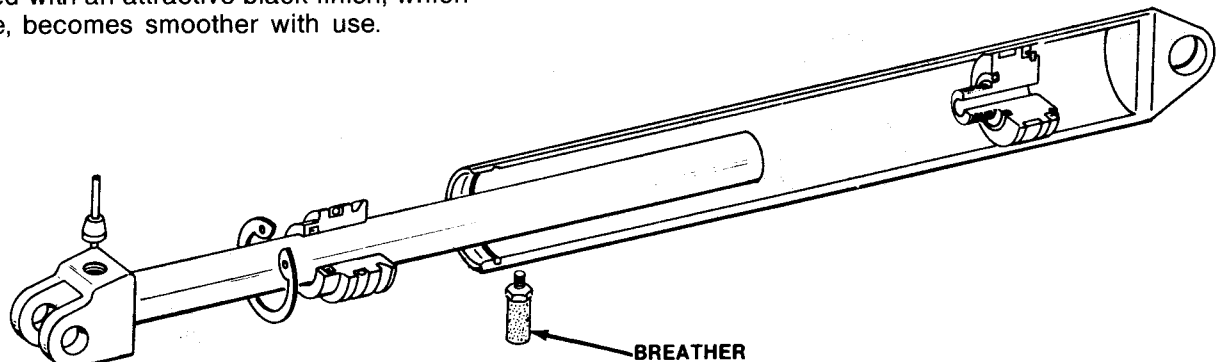
Reassemble and install the cylinder in the approximate reverse order of disassembly.

NOTE

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.

NOTE

Special tools, listed in Section 11, may be necessary to properly reassemble the cylinder.

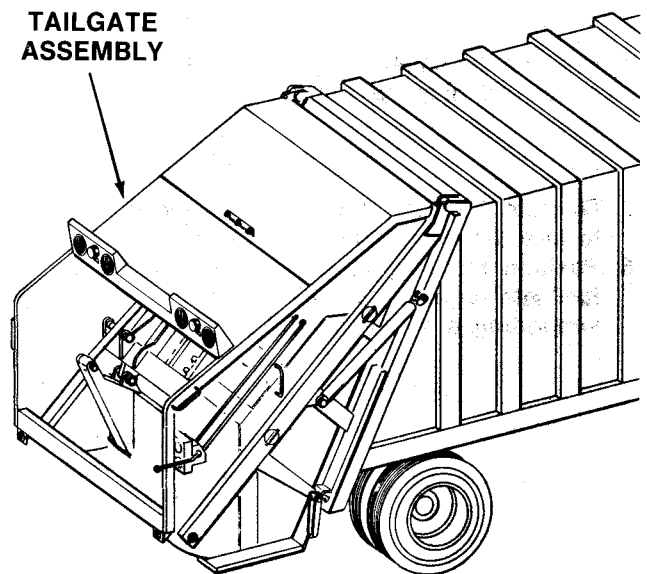


DESCRIPTION OF THE TAILGATE ASSEMBLY

The tailgate assembly houses the carrier and packer plate cylinders, carrier and packer plates and the "hopper" where refuse is first loaded into the Alpha. The tailgate is raised (for unloading) and lowered by the tailgate lift cylinders which are actuated by the tailgate lift lever.

The need to remove the tailgate is rare and limited to repair of the hopper area and removal of the carrier plate. Procedures for carrier plate removal are different and are covered under REMOVAL OF CARRIER PLATE.

TAILGATE ASSEMBLY



SECTION 9

SERVICE AND REPAIR

REMOVAL OF THE TAILGATE ASSEMBLY

Operational Status

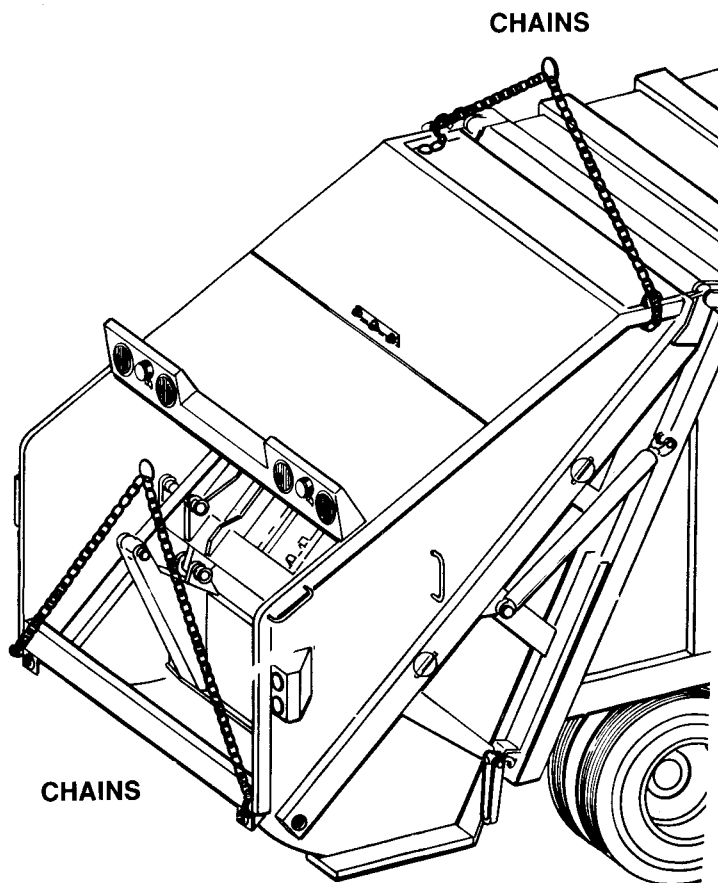
Truck	Off	Keys	Removed
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1. Release the tailgate clamps.
2. Disconnect and remove the tailgate lift cylinders as described earlier in this section.
3. Disconnect and cap the hydraulic lines.
4. Disconnect the electrical conduit and wires from the junction box on the tailgate.

NOTE

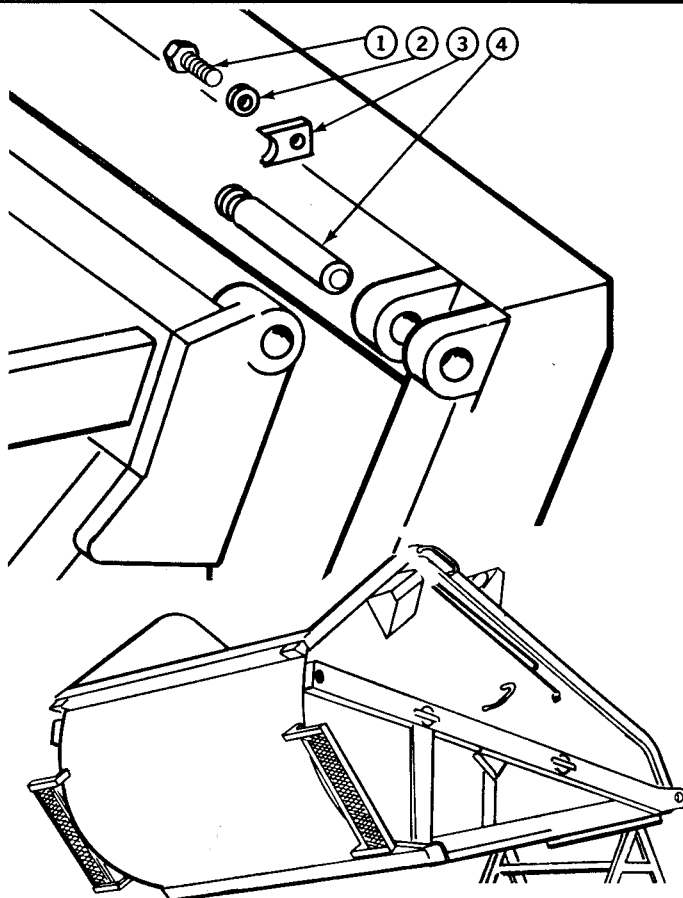
See Sec. 4, *GENERAL REPAIR PRACTICES*, for detailed information about the correct use of slings and lifting chains.

5. Attach chains, connected to a suitable lifting device with a minimum lifting capacity of 7,500 lbs. to the tailgate as shown. Operate the lifting device no more than necessary to support the weight of the tailgate.



6. Remove the capscrew (1), lockwasher (2), retainer (3) and hinge pin (4).

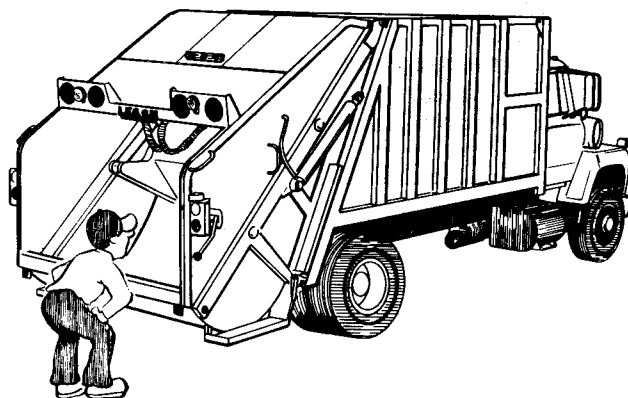
7. Operate the lifting device and/or move the truck to free the tailgate from the body.
8. Position the tailgate on supports if needed to facilitate repairs. Supports must be capable of supporting a minimum of 7,500 lbs.



INSPECTION AND REPLACEMENT OF TAILGATE

Operational Status			
Truck	Off	Keys	Removed

1. Inspect all sheet metal for badly bent or dented conditions. Check the hardware holes for enlargement or breaks in the metal. Check threaded holes for stripped or otherwise damaged threads. Check the rubber seal for any sign of deterioration. Check handles for looseness.
2. Replace any defective part. Follow all safety precautions pertaining to welding described in Sec. 4, GENERAL REPAIR SAFETY PRECAUTIONS.
3. See Sec. 4, GENERAL REPAIR INSTRUCTIONS for information pertaining to welding repairs.



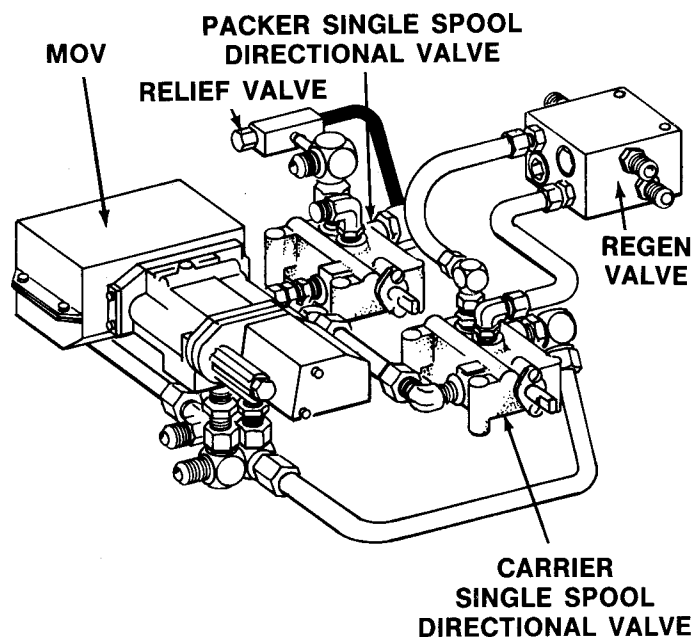
REASSEMBLY AND INSTALLATION OF TAILGATE

Reassemble and install the tailgate in the approximate reverse order of disassembly and removal.

DESCRIPTION OF SINGLE-SPOOL DIRECTIONAL CONTROL VALVES

These two manually operated valves mounted under the lower top sheet of the tailgate, direct the extension or retraction of the four operating cylinders. They are single-spool, double-acting directional control valves, actuated by the packing lever located at the right rear of the tailgate. One directional valve directs hydraulic fluid from the main operating valve through the regen valve to the two carrier plate cylinders, and the other valve directs fluid to the packer plate cylinders. A functional description of these valves is included in the hydraulic flow diagrams, see Sec. 8, TROUBLESHOOTING.

It is important that the mechanical action of the directional valves be synchronized. This is achieved by proper adjustment of the valve operating rod assembly as described in this section.



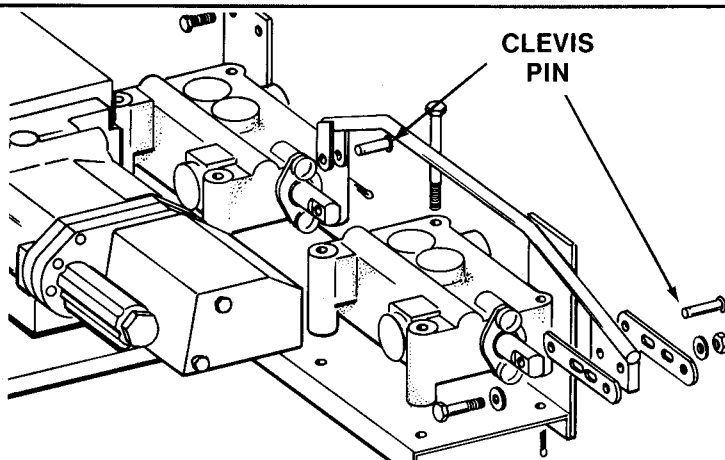
SERVICE AND REPAIR

REMOVAL OF SINGLE-SPOOL DIRECTIONAL CONTROL VALVES

Operational Status

Truck	Off	Keys	Removed
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1. Remove the top sheets to provide better accessibility.
2. Remove the clevis pin connecting the operating rod to the valve.
3. Disconnect and cap all the hydraulic lines to the valve.
4. Plug all open ports on the valve.
5. Carefully remove the attaching hardware and remove the valve.

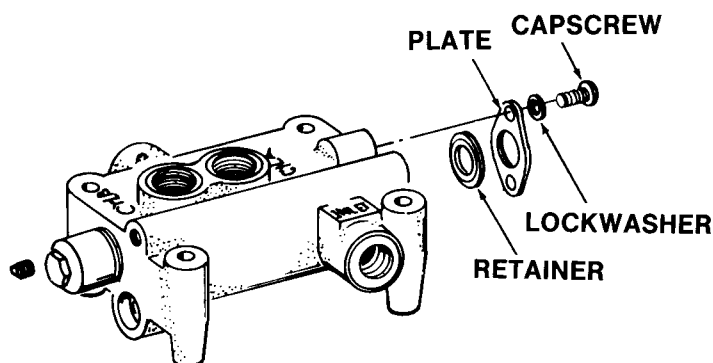


DISASSEMBLY OF SINGLE-SPOOL DIRECTIONAL VALVE

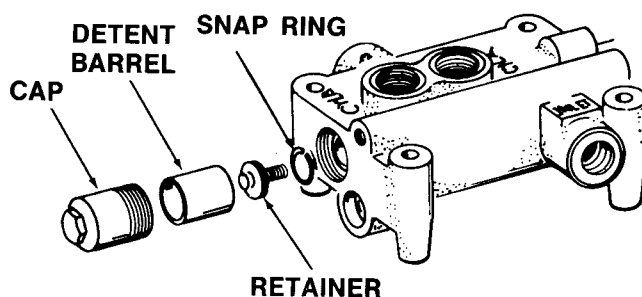
CAUTION

Typically, only the D-Spool can be replaced (D-Spool indicates standard diameter of spool) during field repair of the valve. Make sure before any disassembly of the valve is started that the valve is cleaned thoroughly on the outside. Plug any open valve port immediately to prevent dirt from entering the valve body.

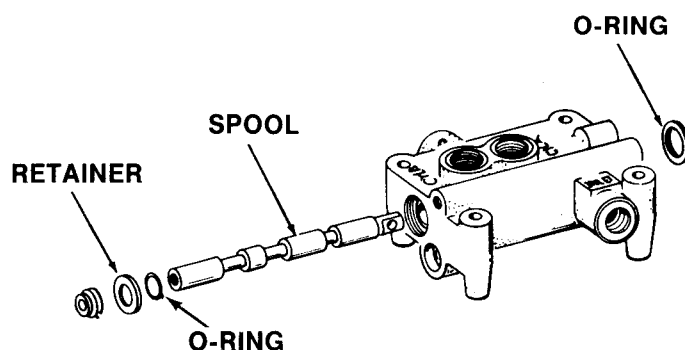
1. Remove capscrew, lockwasher, plate and retainer.



2. Remove cap, detent barrel, retainer, and snap ring.

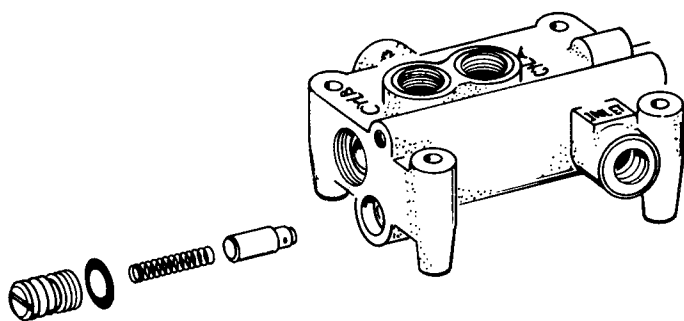


3. Remove retainers.
4. Remove o-rings.
5. Remove spool carefully.



INSPECTION OF SINGLE-SPOOL DIRECTIONAL VALVE

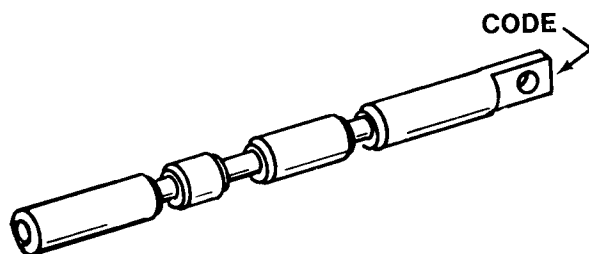
1. If the valve has been completely disassembled, clean all parts in a suitable solvent and dry.
2. Inspect for any signs of damage or wear, replacing parts as necessary.
3. Before installing a new spool, be sure it is absolutely clean.
4. The bore *must be smooth*. Inspect for any slight burrs. Remove these with a crocus cloth.
5. Inspect the reverse flow check valve poppet for wear.
6. Check the spring for breaks:



REVERSE FLOW CHECK

SPOOL ORDERING PROCEDURE

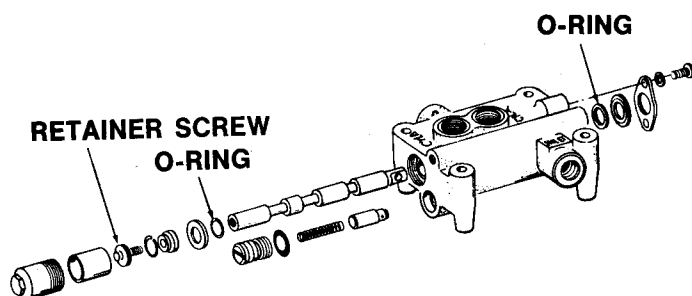
A replacement spool must be ordered by part number which is designated by a code letter stamped on the linkage end. Use a black spool for replacement during repair.



REASSEMBLY OF SINGLE-SPOOL DIRECTIONAL VALVE

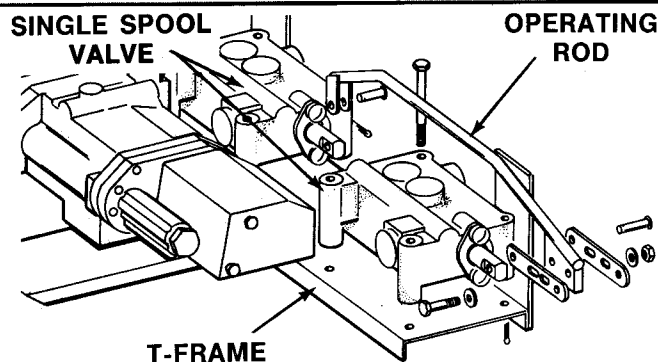
Reassemble the single-spool directional valve in the approximate reverse order of disassembly. Note the following:

1. The spool should slide into the bore with a slight hand pressure, and without perceptible side clearance. If there is any tendency for the spool to bind or hang up, check again for a slight burr in the bore.
2. Install new o-rings.
3. Use Lockite on the retainer screw in the end of the spool.



INSTALLATION OF SINGLE-SPOOL DIRECTIONAL VALVE

1. Position the valve on the T-frame assembly and secure in place with the attaching hardware.
2. Reconnect all hydraulic lines to the valve.
3. Pull the spools on both valves all the way out. Ensure that the snap ring locks into the detent barrel groove.
4. Adjust the length of the operating rod assembly so both clevis pins can be inserted without moving the spools.
5. Now push both spools all the way in and check that both clevis pins are free in this position.
6. Install cotter pins.



NOTE

The valves must be synchronized for proper automatic operation of the MOV.



SERVICE AND REPAIR

DESCRIPTION OF REGEN VALVE

The regen (regenerating) valve is located between the carrier single spool valve and the carrier cylinders. It's function is to redirect some fluid from the carrier cylinder rod end to the case end, thus increasing the flow volume. The greater the flow rate into the cylinder the more rapid the cylinder extension. This valve also has a ball check which prevents carrier plate drift or cylinder extension unless released by pressure from the main operating valve (M.O.V.).

Operational Status

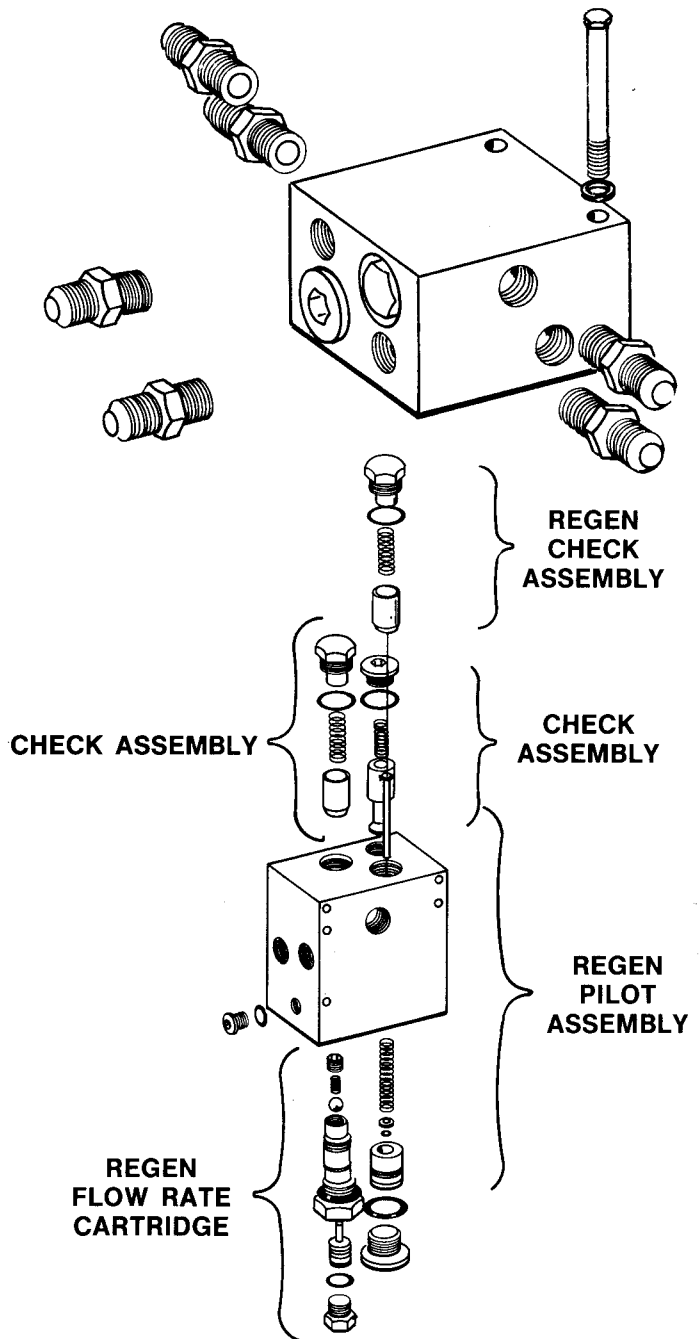
Truck	Off	Keys	Removed
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REMOVAL

1. Remove the regen valve, disconnect and cap all the hydraulic lines and hoses to the valve.
2. Plug all the open ports on the valve.
3. Carefully remove the attaching hardware while supporting the valve.

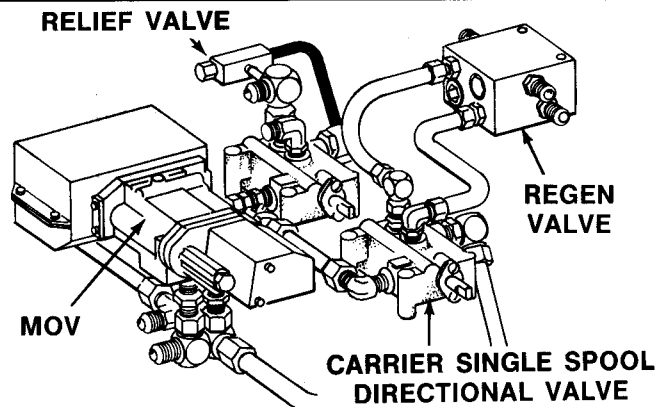
DISASSEMBLY AND INSPECTION OF REGEN VALVE

1. Wash the valve body with solvent to prevent contamination.
2. Remove the cartridge and section components.
3. Inspect all the parts for damage or excessive wear (replace defective parts).
4. Clean all internal parts as well as the valve body passages.
5. Replace all o-rings every time the part is removed.



REASSEMBLY AND INSTALLATION OF REGEN VALVE

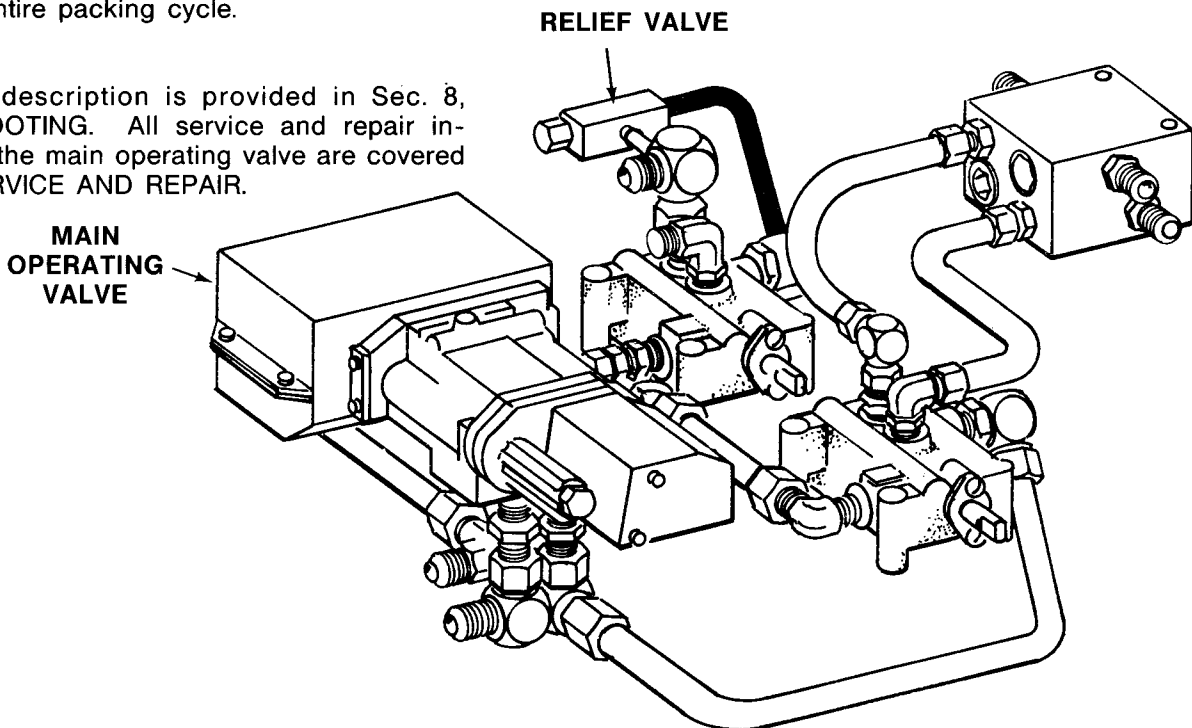
1. If replacing a cartridge with a new one, insert it into the valve body and torque properly.
2. If replacing the o-rings, first remove the old o-rings, clean the cartridge thoroughly and then coat the o-rings with hydraulic fluid before sliding onto the cartridge.
3. Re-insert the valve cartridge into the valve body and tighten down.
4. Install the valve in the approximate reverse order of removal.



DESCRIPTION OF MAIN OPERATING VALVE

The main operating valve controls the hydraulic flow, and thus, the action of the packer and carrier plates through the entire packing cycle.

A functional description is provided in Sec. 8, TROUBLESHOOTING. All service and repair instructions for the main operating valve are covered in Sec. 9, SERVICE AND REPAIR.



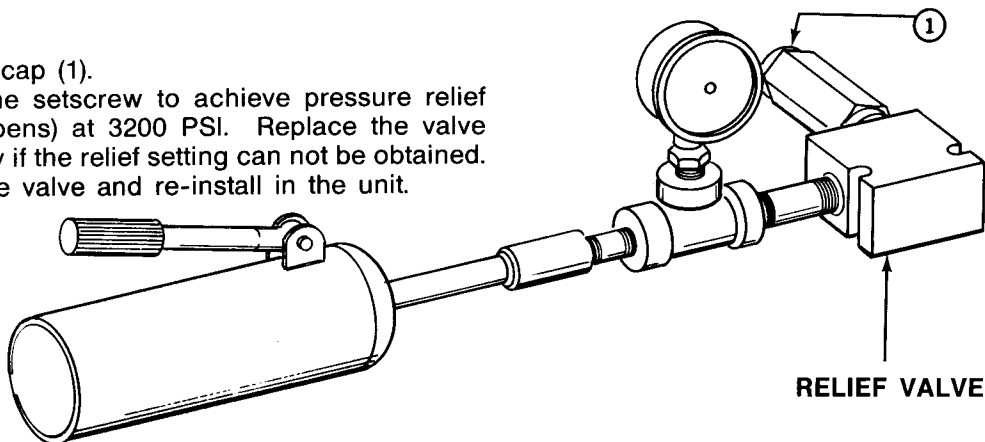
TEST/ADJUSTMENT OF PACKER CYLINDER RELIEF VALVE

Operational Status			
Truck	Off	Keys	Removed

1. Remove the relief valve from the unit and cap the hydraulic lines.
2. Connect the valve to a test set-up as shown.
3. Pump the Port-a-Power and watch the pressure gauge. The valve should open at 3200 PSI.

IF NOT:

4. Remove cap (1).
5. Adjust the setscrew to achieve pressure relief (valve opens) at 3200 PSI. Replace the valve assembly if the relief setting can not be obtained.
6. Clean the valve and re-install in the unit.



DESCRIPTION OF 2-SPOOL DIRECTIONAL CONTROL VALVE FOR TAILGATE LIFT AND PUSHOUT CYLINDERS

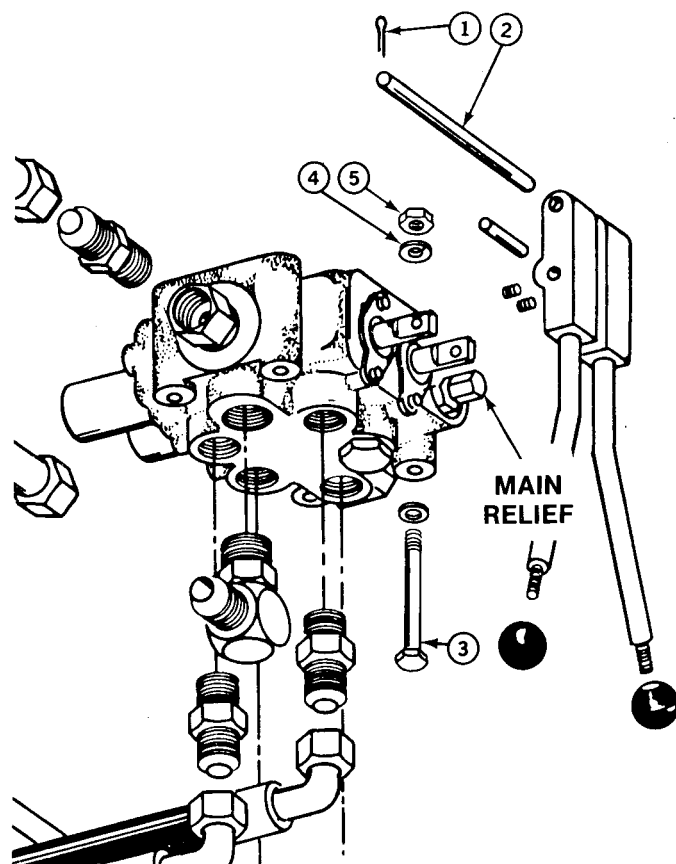
This manually operated valve provides directional control to the cylinders for raising and lowering the tailgate, and to the cylinders which move the push-out plate rearward and operate the clamp. The valve is a two-spool directional control type, mounted under the left side of the body. A functional description of this valve is presented in the hydraulic flow diagrams, in Sec. 8, TROUBLESHOOTING.

This valve also has the main pressure relief for the hydraulic system.

Operational Status			
Truck	Off	Keys	Removed

REMOVAL OF 2-SPOOL DIRECTIONAL VALVE

1. Remove the lockpin (1) and control lever pivot pin (2).
2. Disconnect the hydraulic lines to the valve. Cap the lines, and plug the valve ports to prevent dirt from entering the valve.
3. Remove the capscrews (3), lockwashers (4), nuts (5) and remove the valve.



DISASSEMBLY OF 2-SPOOL DIRECTIONAL VALVE

1. Clean paint, dirt, and burrs, from the end of the spool.
2. Remove two (2) capscrews, item 2, from the spring covers, item 1.
3. Disassemble spring pack by removing the allen head bolt, item 3, and remove items 9, 10, 11, 12, 13, 14 and 15.
4. Remove the plate, item 5.
5. Pull the spool, item 4, out through the eye end.

NOTE

For cleaning or inspection, this is probably as far as you will need to go with disassembly.

6. Remove wipers, item 6.
7. Use a long brass rod and drive seal, item 7, out from the opposite end of the plunger bore.

CAUTION

Be careful not scratch the spool or seal bore. Any scratches will scrap the valve.

NOTE

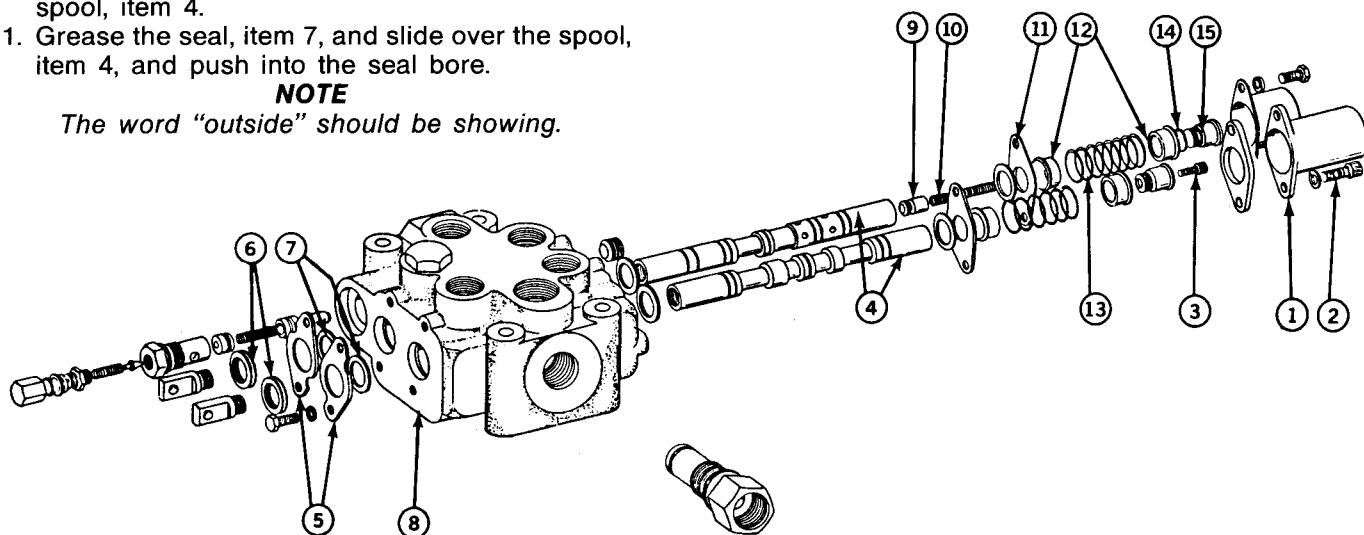
If the seals are being replaced in both spools repair each spool, one at a time to insure that the spools are reinstalled in their proper bores. The spools are different.

8. Reinstall the spool, item 4, by gently "feeling" the spool into the bore. Do not force, it should slide easily.
9. Center the spool in its approximate neutral position in the valve body, item 8.
10. Place a piece of plastic film over the end of the spool, item 4.
11. Grease the seal, item 7, and slide over the spool, item 4, and push into the seal bore.

NOTE

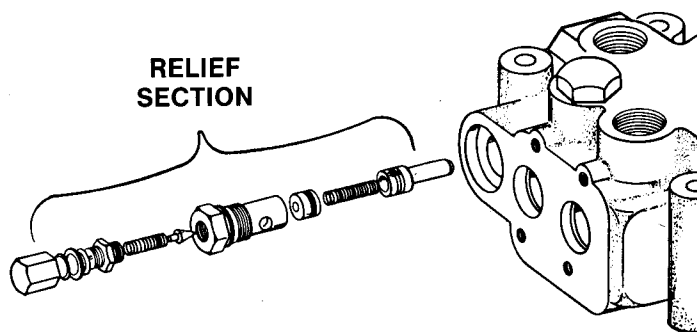
The word "outside" should be showing.

12. Make certain to remove all the plastic film to prevent leakage.
13. Press the new seal(s), item 7, into the bore by using a driver .010 or smaller than the inside diameter bore of the valve body. Gently drive the seal, item 7, flush with item 8.
14. Install new wipers, item 6.
15. Install retainer plates, item 5.
16. Reinstall the spring pack, items 9, 10, 11, 12, 13, 14 and 15.
17. Locktite and install the capscrews, item 2, and tighten to 8 foot pounds.
18. Reinstall the spring covers, item 1.



SERVICE AND REPAIR

19. If necessary for cleaning or repair, the relief valve section can be removed and disassembled.



INSPECTION OF 2-SPOOL DIRECTIONAL CONTROL VALVE

1. Use solvent to thoroughly clean all parts and air dry.
2. Inspect the valve body for smooth operation.
3. Inspect all other parts for wear and damage. Replace as necessary.
4. Before reinstalling a spool, be sure it is absolutely clean.

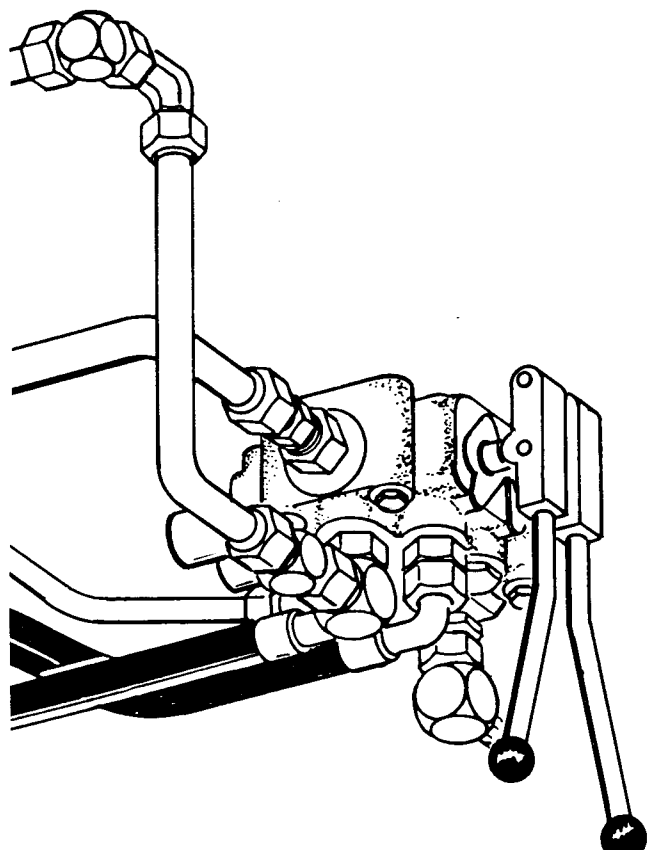
REASSEMBLY AND INSTALLATION OF 2-SPOOL DIRECTIONAL CONTROL VALVE

Reassemble and install the parts in the reverse order of disassembly.

INSTALLATION OF 2-SPOOL DIRECTIONAL CONTROL VALVE

Operational Status			
Truck	Off	Keys	Removed

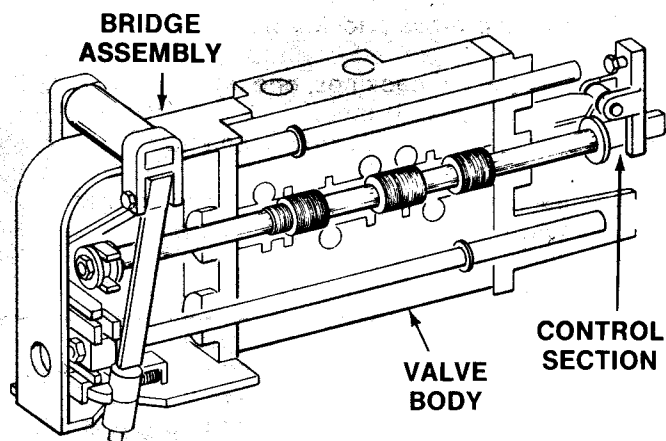
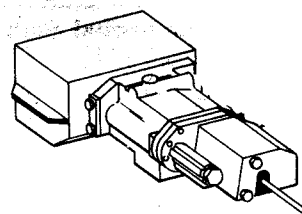
1. Secure the valve to the mounting bracket using capscrews, lockwashers and nuts.
2. Connect all the hydraulic lines and tighten securely.
3. Install the control lever pivot rod and lock pins.
4. Recheck the main relief valve pressure as described under PRESSURE CHECKS, Sec. 7, CHECK-OUT.



DESCRIPTION OF MAIN OPERATING VALVE

The main operating valve controls the hydraulic flow, and thus, the action of the packer and carrier plates through the entire packing cycle.

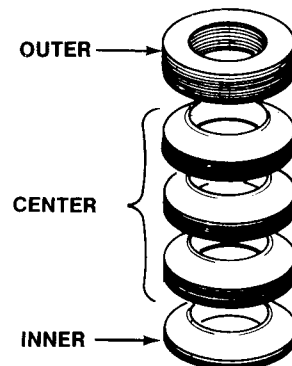
A functional description of the main operating valve is covered in Section 6, Description.



PACKING

RESEALING THE MOV

The main spool, reversing plunger, and knockout plunger are sealed with five (5) segments of "V" Chevron packing.



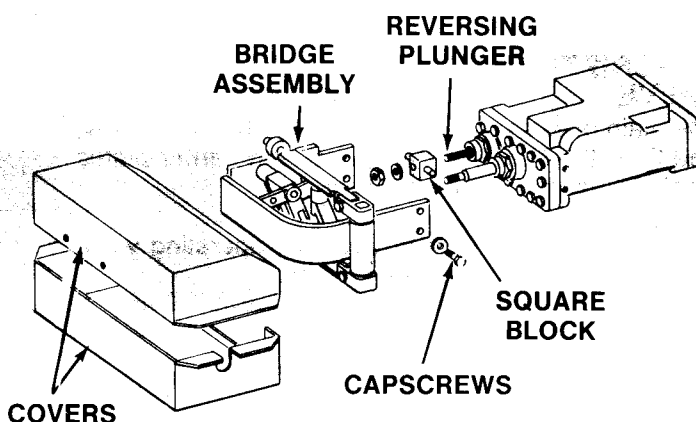
SERVICE AND REPAIR

REVERSING PLUNGER

Operational Status

Truck	Off	Keys	Removed
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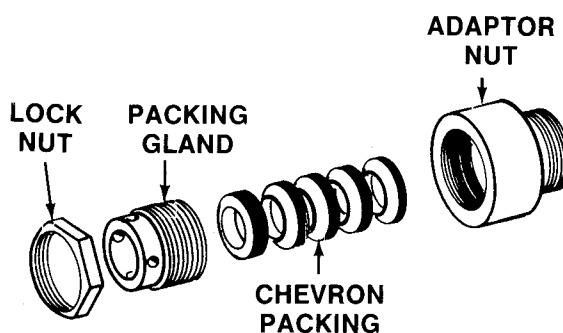
1. Remove the bridge assembly covers.
2. Remove the bridge assembly by removing four (4) 5/16" capscrews.
3. Remove the reversing plunger nut and washer from the reversing plunger.
4. Remove the square block from the reversing plunger. (Note the filed corner.)



5. Remove the locknut from the brass packing gland.
6. Remove the brass packing gland from the steel adaptor nut.
7. Remove the old packings, one (1) outer, three (3) center, and one (1) inner.
8. Lubricate the new packing segments.

NOTE

The packing kit contains one (1) extra center segment. Discard this extra segment.



9. Using Leach T-B19516-7-628 packing tool, insert the lubricated packing segments in order: inner (1) center (3) and outer (1).
10. Insert and thread the brass packing gland into the steel adaptor nut. The brass gland should be lightly torqued (slightly more than finger tight) to compress and seat all the packing segments.

NOTE

Over compression of the packing segments may interfere with plunger travel. Simply loosening the packing gland will NOT allow the packing to loosen. Completely remove the packing and reinstall, being careful to not over-tighten.

11. Thread and tighten the locknut onto the brass packing gland.

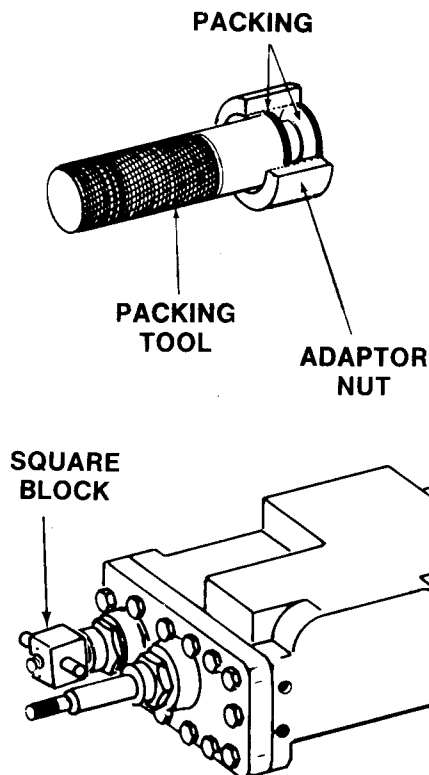
NOTE

The brass gland may require periodic adjustment to compress the packing segments as the packing segments are worn by the reversing plunger. To adjust, loosen the locknut and tighten the brass packing gland being careful to not over-tighten. Tighten the locknut.

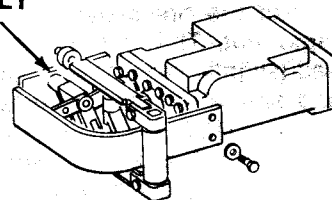
12. Thread the square block onto the reversing plunger shaft with approximately an equal number of threads exposed.

NOTE

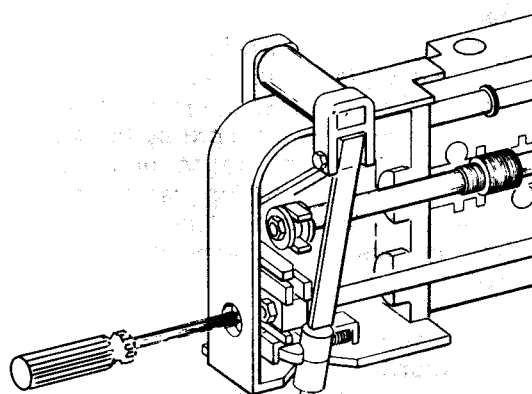
The filed corner of the square block should be towards the valve body and the main spool.



13. Reinstall the bridge assembly. The final position of the bridge assembly should not restrict or bind the main spool travel.

BRIDGE
ASSEMBLY

14. Use a flat screwdriver in the slot on the end of the plunger shaft to position the square block on the reversing plunger shaft. Three quarters of an inch (3/4") should be exposed between the threaded end of the reversing plunger and the square block.
15. Install the washer and torque the lock nut onto the reversing plunger.
16. Test the valve operation before replacing the bridge assembly covers.



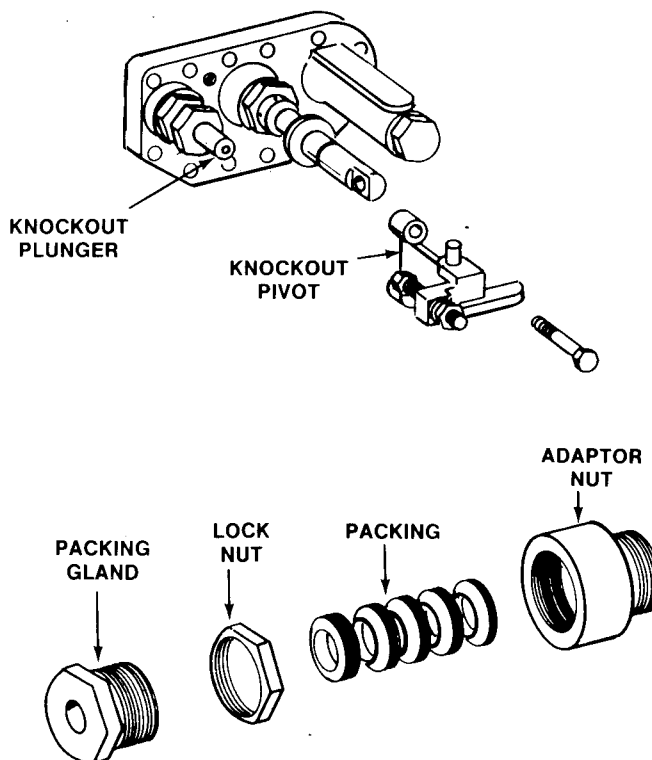
KNOCKOUT PLUNGER

Operational Status			
Truck	Off	Keys	Removed

1. Remove the control section cover.
2. Remove the knockout pivot assembly by removing the two (2) capscrews from the valve end plate.
3. Loosen the lock nut on the brass packing gland.
4. Remove the brass packing gland and the lock nut from the steel adaptor nut.
5. Remove the packing: outer (1) center (3) and inner (1).
6. Lubricate all the new segments of packing to be used.

NOTE

The packing kit contains one (1) extra center segment. Discard this extra segment.



7. Using Leach T-B19516-7-628 packing tool, insert the lubricated packing segments in order, inner (1) center (3) and outer (1).
8. Insert and thread the brass packing gland into the steel adaptor nut. The brass gland should be lightly torqued (slightly more than finger tight) to compress and seat all packing segments.

NOTE

Over compression of the packing segments may interfere with plunger travel. Simply loosening the packing gland will NOT allow the packing to loosen. Completely remove the packing and reinstall, being careful to not over-tighten.

9. Thread and tighten the locknut to the brass packing gland.

NOTE

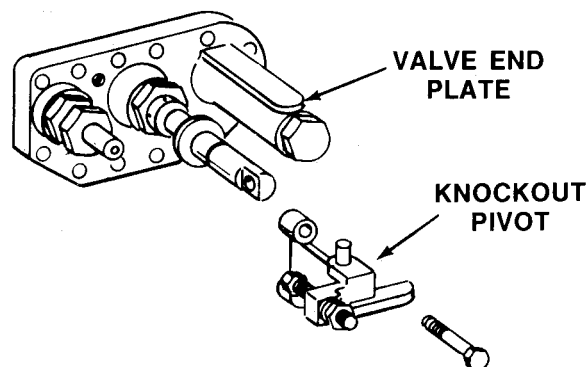
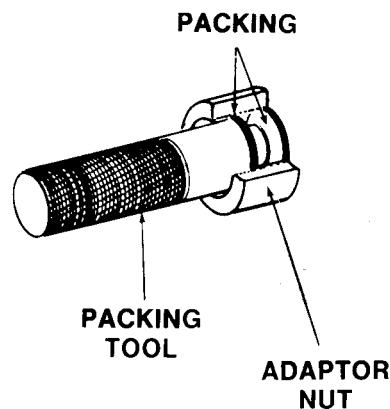
The brass gland may require periodic adjustment to compress the packing segments as the segments are worn by the knockout plunger. To adjust, loosen the locknut and tighten the brass packing gland. Tighten the locknut, do not over-tighten.

10. Reinstall the knockout pivot to the valve end plate.

NOTE

A minimum of 1/8" is required between the knockout pivot and knockout plunger.

11. Test the valve operation before replacing the control section cover.



MAIN SPOOL

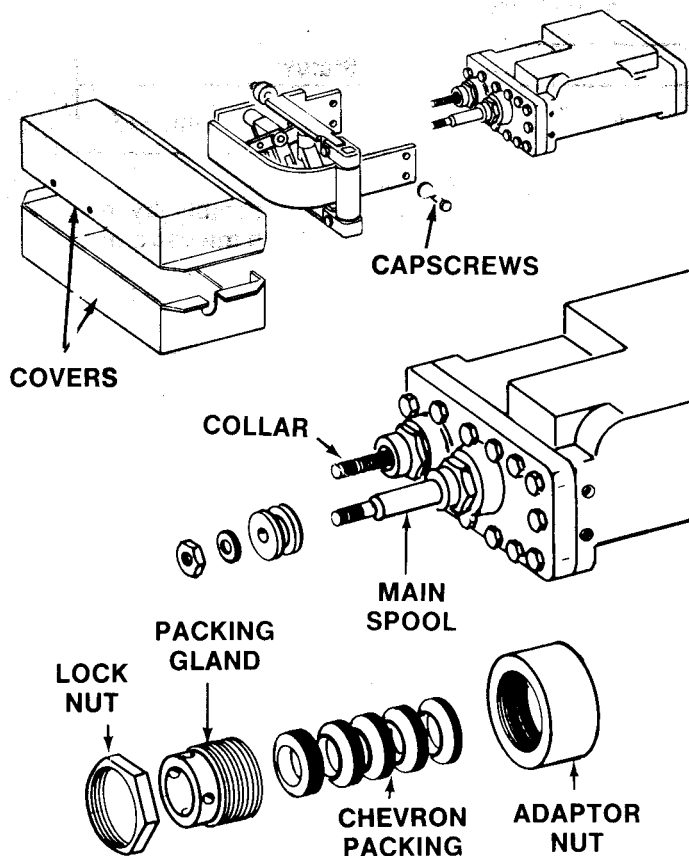
BRIDGE SIDE

Operational Status			
Truck	Off	Keys	Removed

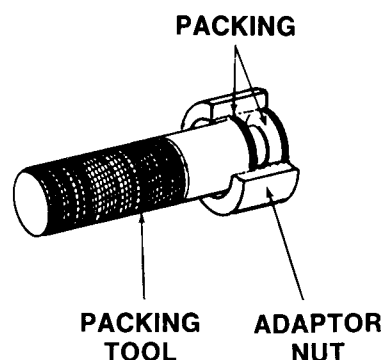
1. Remove the bridge assembly covers.
2. Remove the bridge assembly by removing the four (4) 5/16" capscrews.
3. Remove the nut and lockwasher on the end of the main spool.
4. Remove the collar from the main spool.
5. Loosen the locknut on the brass packing gland.
6. Remove the brass packing gland from the valve end plate.
7. Remove the packings, outer (1) center (3) inner (1).
8. Lubricate the new packing segments.

NOTE

The packing kit contains two (2) extra center segments. Discard the two (2) extra segments.



9. Using Leach T-B19516-4-753 packing tool, insert the lubricated packing segments in order, inner (1) center (3) and outer (1).



10. Insert and thread the brass packing gland into the valve end plate. The brass packing gland should be lightly torqued (slightly more than finger tight) to compress and seat all packing segments.

NOTE

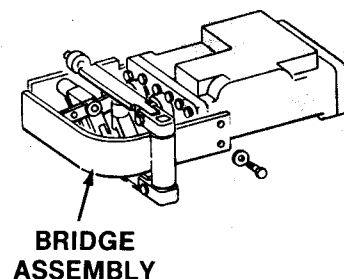
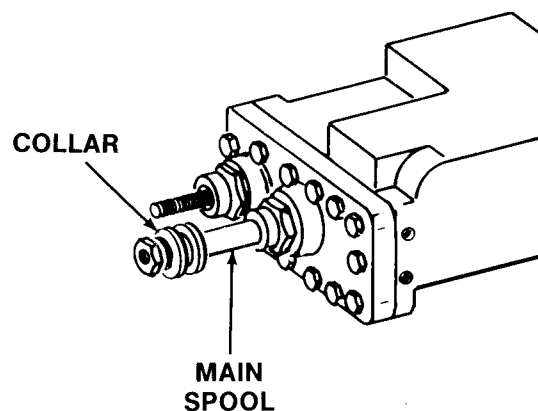
Over compression of the packing segments may interfere with main spool travel. Simply loosening the packing gland will NOT allow the packing to loosen. Completely remove the packing and reinstall, being careful to not over-tighten.

11. Tighten the locknut onto the brass packing gland.
12. Install the collar onto the main spool.
13. Install the lockwasher and torque the nut onto the main spool. Do not over torque the nut. The main spool should shift smoothly by hand.
14. Install the bridge assembly.
15. Tighten the nut on the main spool.

NOTE

Over tightening of the nut may interfere with the main spool travel when the collar is re-inserted onto the bridge yoke. The main spool should shift smoothly by hand.

16. Test the valve operation before installing the bridge assembly covers.

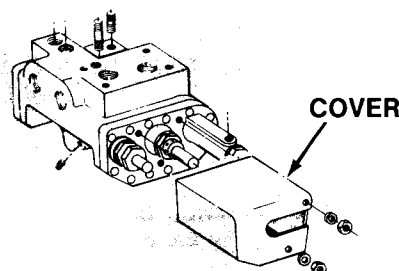


MAIN SPOOL

ROD/KNOCKOUT SIDE

Operational Status			
Truck	Off	Keys	Removed

1. Remove the control section cover and studs.
2. Remove the control rod from the main spool nut.



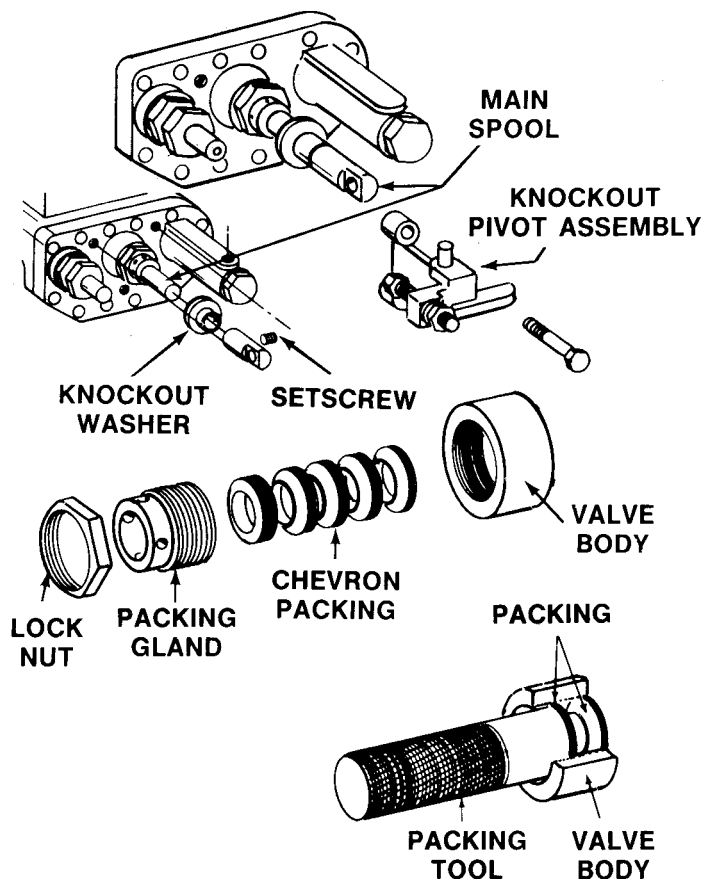
SERVICE AND REPAIR

3. Remove the knockout pivot assembly by removing the two (2) capscrews in the valve end plate.
4. Loosen the Allen set screw in the main spool nut.
5. Remove the main spool nut from the main spool.
6. Remove the washer from the main spool.
7. Loosen the locknut from the brass packing gland.
8. Remove the brass packing gland from the valve end plate.
9. Remove the packings, outer (1) center (3) inner (1).
10. Lubricate the new packing segments.

NOTE

The packing kit contains two (2) extra center segments. Discard these extra segments.

11. Using Leach T-B19516-7-753 packing tool, insert the lubricated packing segments in order, inner (1) center (3) and outer (1).



12. Insert and thread the brass packing gland into the valve end plate. The brass packing gland should be lightly torqued (slightly more than finger tight) to compress and seat all packing segments.
13. Tighten the locknut to the brass packing gland.

NOTE

The brass packing gland may require periodic adjustment to compress the packing segments as the packing segments are worn by the main spool. To adjust, see previous adjustment.

14. Thread the knockout washer onto the main spool.
15. Thread and tighten the main spool nut onto the main spool.
16. Tighten the Allen set screw into the main spool nut.

NOTE

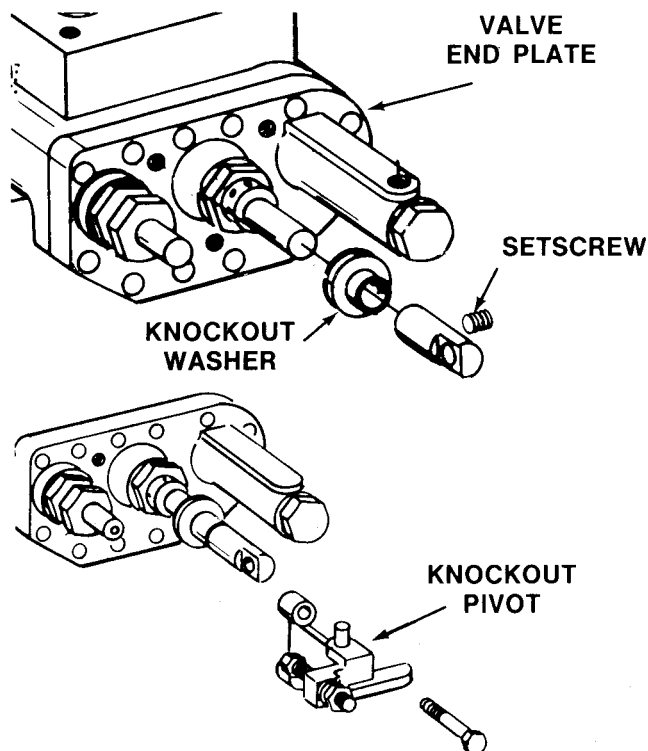
Position the set screw 180° from the knockout pivot by rotating the main spool if necessary.

17. Reinstall the knockout pivot assembly.

NOTE

A minimum of 1/8" clearance between the adjusting capscrew and the knockout plunger must be present.

18. Reinstall the control rod into the main spool.
19. Install the studs and the control section cover.



RESEALING THE MOV

Gaskets are used to seal the bridge section and the control section valve end plates to the valve body.

BRIDGE SECTION

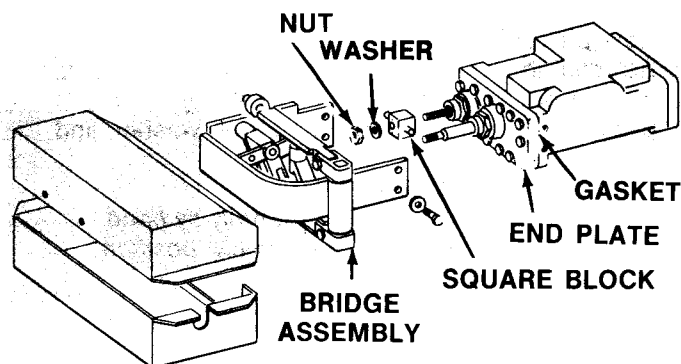
Operational Status			
Truck	Off	Keys	Removed

1. Remove the bridge assembly covers.
2. Remove the bridge assembly by removing the four (4) 5/16" capscrews.
3. Remove from the reversing plunger the following items: nut, washer, square block, lock nut, brass packing gland, and packing segments.
4. Remove from the main spool the nut, lockwasher, collar, lock nut, brass packing gland, and packing segments from the valve end plate.
5. Remove all thirteen (13) Allen head capscrews and lockwashers from the end plate, beginning in the center and continuing in a crossing pattern.
6. Carefully separate the end plate from the valve body and gently remove the end plate from the main spool and reversing plunger.
7. Remove all gasket material from the valve end plate and the valve body. Clean both surfaces thoroughly. Inspect the valve end plate and the valve body for abnormal wear or warpage.
8. Align the new gasket with the valve end plate.
9. Carefully place the valve end plate and gasket over the main spool and reversing plunger and align with the valve body holes.
10. Start all thirteen (13) Allen capscrews and lockwashers into the valve body.
11. Insert Leach T-B19516-4 & T-B19516-7 packing tools into the reversing plunger steel adaptor nut and main spool opening of the valve end plate. The packing tools will assist in aligning the valve end plate with the valve body. Incorrect alignment may interfere with the main spool and reversing plunger travel.
12. Using a crossing pattern beginning in the middle of the valve end plate, thread all thirteen (13) capscrews and lockwashers into the valve end plate until the lockwashers contact the valve end plate. The main spool should shift smoothly by hand.

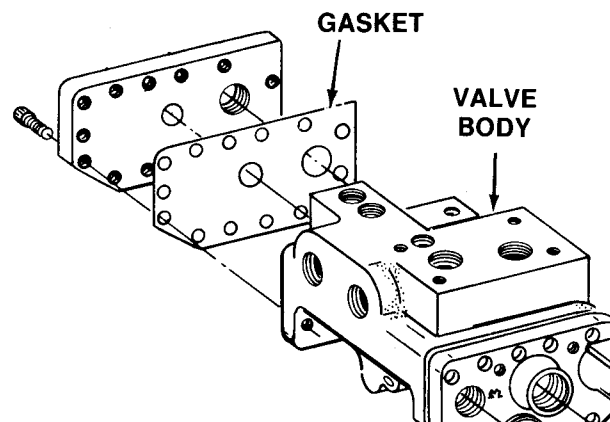
NOTE

The end plate should contact the valve body evenly to avoid warping the valve end plate.

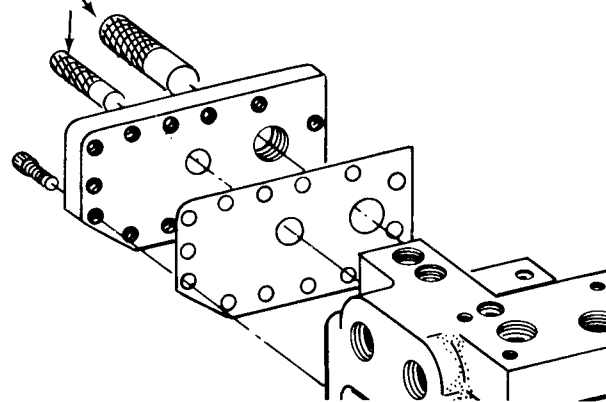
13. Using a crossing pattern beginning in the middle of the valve end plate, apply final torque to all thirteen (13) Allen head screws. The main spool should shift smoothly by hand, if not, loosen the Allen head screws and adjust the alignment of the valve end plate.



COVERS



PACKING TOOL



14. Remove the Leach T-B19516-4 & 7 packing tools from the reversing plunger steel adaptor nut and the main spool opening in the valve end plate.
15. Reinstall the main spool packing segment (see resealing main spool items 9-15) the brass packing gland, locknut, collar, lockwasher, and nut.

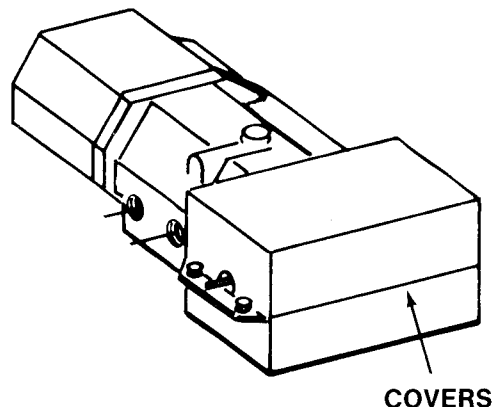
SECTION 9

SERVICE AND REPAIR

NOTE

New packing segments should be installed.

16. Reinstall the reversing plunger packing segments (see resealing main spool items 9-15) the brass packing gland, locknut, square block, washer, and nut.
17. Reinstall the bridge assembly.
The main spool should shift smoothly by hand. Adjustment of the bridge assembly position may be necessary.
18. Replace the bridge assembly covers.

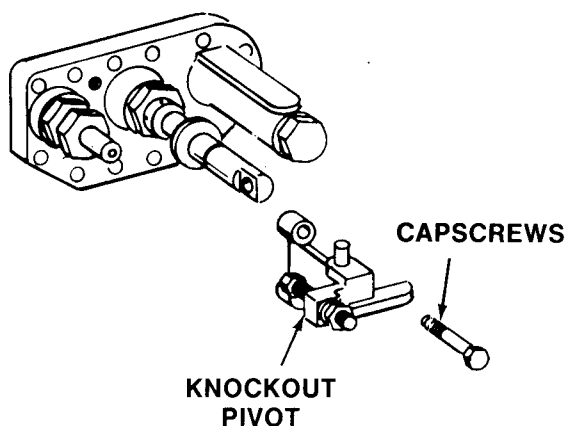


CONTROL SECTION

Operational Status

Operational Status			
Truck	Off	Keys	Removed

1. Remove the cover and cover studs from the valve end plate.
2. Remove the control rod from the main spool nut.
3. Remove the knockout pivot assembly by removing the two (2) capscrews from the valve end plate.

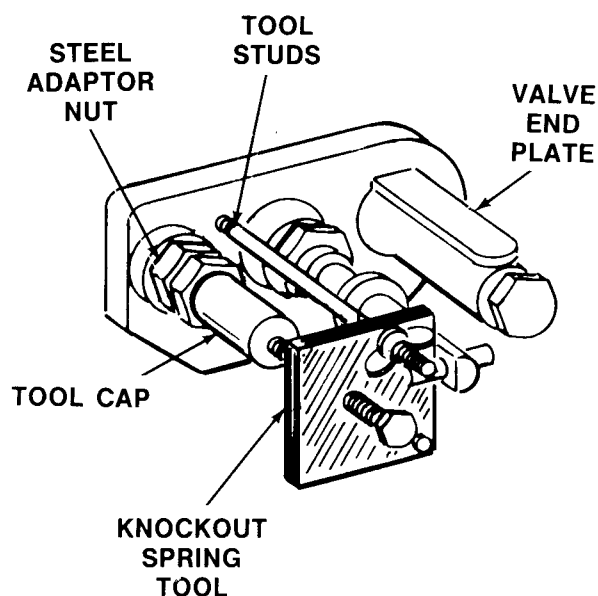


4. Install Leach T-B19516-6 knockout spring tool by:
 - A. Shifting the main spool completely towards the control rod.
 - B. Inserting the pin of the tool into the opening of the main spool nut.
 - C. Installing the tool studs into the knockout pivot assembly mounting holes in the valve end plate.
5. Place the tool cap over the end of the knockout plunger.
6. Tighten the tool capscrew against the end of the cap.
7. Loosen the steel adaptor nut.

NOTE

The knockout spring is continually under tension. This tool allows controlled release of the knockout spring tension and contains the steel adaptor nut.

8. Rotating the tool capscrew counter-clockwise, slowly release the tension of the spring as the adaptor nut is removed from the valve end plate.



9. Remove the knockout spring tool and remove the adaptor nut, compression washer, and spring.
10. Loosen the Allen setscrew in the main spool nut.
11. Remove the knockout washer from the main spool.
12. Remove the locknut, brass packing gland and packing segments from the valve end plate.
13. Remove all twelve (12) Allen head screws and lockwashers from the end plate, beginning at the center and continuing in a crossing pattern.
14. Carefully separate the end plate from the valve body and gently remove the end plate from the main spool and the knockout plunger.
15. Remove all gasket material from the valve end plate and the valve body. Clean both surfaces thoroughly. Inspect the valve end plate and valve body for abnormal wear or warpage.
16. Insert the knockout plunger steel adaptor nut flush into the valve end plate, but do not tighten.
17. Align the new gasket with the valve end plate.
18. Carefully place the valve end plate and gasket over the main spool and knockout plunger and align with the valve body holes.
19. Start all twelve (12) Allen capscrews and lockwashers into the valve body.
20. Insert Leach T-B19516-4 & 7 packing tools into the knockout plunger steel adaptor nut and main spool opening in the valve end plate. The packing tools will assist in aligning the valve end plate with the valve body. Incorrect alignment may interfere with the main spool and knockout plunger travel.
21. Using a crossing pattern beginning in the middle of the valve end plate, thread all twelve (12) Allen capscrews and lockwashers into the valve end plate until the lockwashers contact the valve end plate. The main spool should shift smoothly by hand.

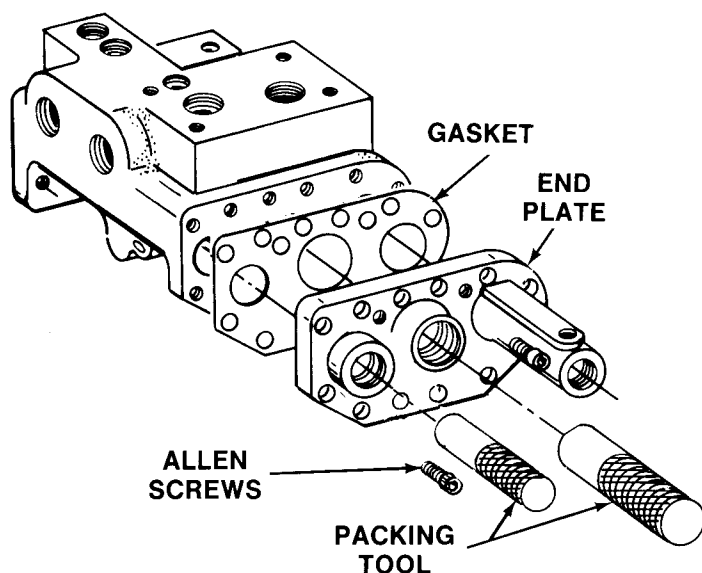
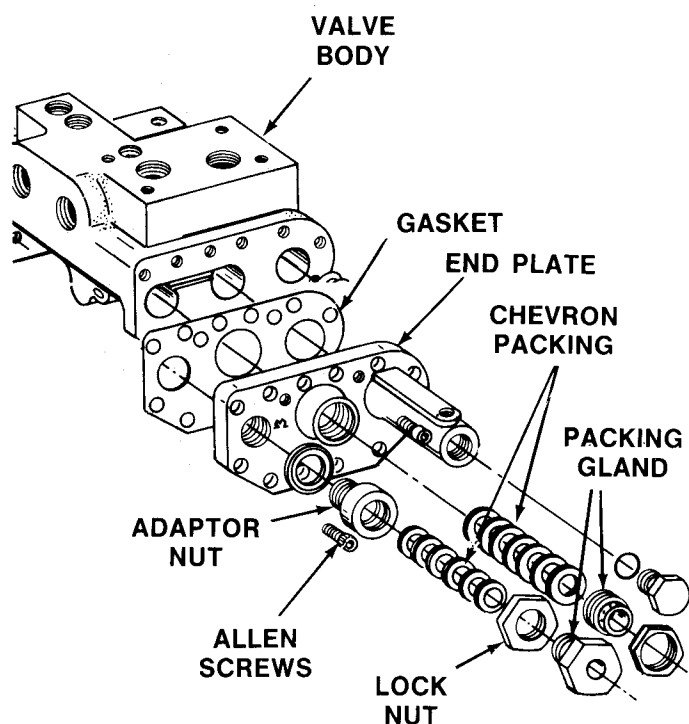
NOTE

The end plate should contact the valve body evenly to avoid warping the end plate.

22. Using a crossing pattern beginning in the middle of the valve end plate, apply final torque to all twelve (12) Allen capscrews. The main spool should shift smoothly by hand. If not, loosen the Allen head capscrews and adjust the alignment of the valve end plate.
23. Remove the Leach T-B19516-4 & 7 packing tools from the knockout plunger adaptor and the main spool opening in the valve end plate.
24. Reinstall the main spool packing segments (see "V" packing section) brass packing gland, locknut, knockout collar and main spool nut.
25. Tighten the Allen set screw.

NOTE

Position the set screw 180° away from the knockout pivot, rotate the main spool if necessary.



SERVICE AND REPAIR

26. Remove the knockout adaptor nut and compression washer. Insert the knockout spring over the knockout plunger, place the knockout adaptor and compression washer over the spring and plunger.
27. Install Leach T-B19516-6 knockout spring tool.
 - A. Shift the main spool completely towards the control rod.
 - B. Insert the pin of the tool into the opening of the main spool nut.
 - C. Install the tool studs into the knockout pivot assembly mounting holes of the valve end plate.
28. Place the tool cap over the end of the knockout plunger.
29. Tighten the tool capscrew against the end of the cap. Rotate the tool capscrew clockwise while tightening the steel adaptor nut and compression washer.

NOTE

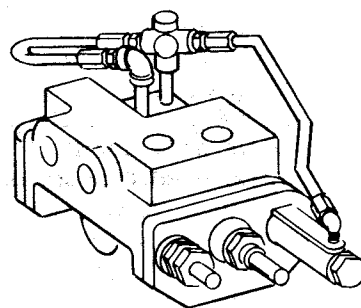
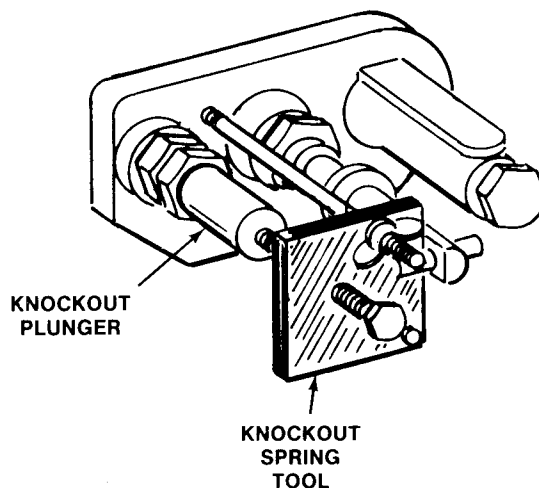
The knockout spring must be compressed to thread and tighten the adaptor nut.

30. Remove Leach T-B19516-6 knockout spring tool.
31. Install the knockout plunger packing segments (see "V" packing section) brass packing gland, and locknut.
32. Reinstall the knockout pivot assembly.

NOTE

With the main spool shifted right towards the control rod the knockout assembly adjusting bolt should have a minimum of 1/8" clearance from the knockout plunger.

33. Reinstall the control rod into the main spool nut.
34. Reinstall the studs and cover.

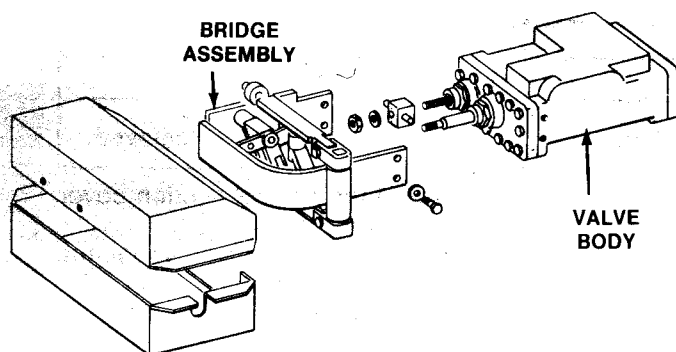


REMOVAL OF REVERSING SPRING

Operational Status

Truck	Off	Keys	Removed
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1. Remove the bridge assembly covers.
2. Remove the roller arm spring.
3. Remove the four (4) capscrews from the bridge and valve body.
4. Remove the bridge assembly.



5. Remove the nut and the washer from the threaded end of the reversing plunger.
6. Remove the square block from the reversing plunger.
7. Remove the reversing plunger steel adaptor nut and compression washer.

NOTE

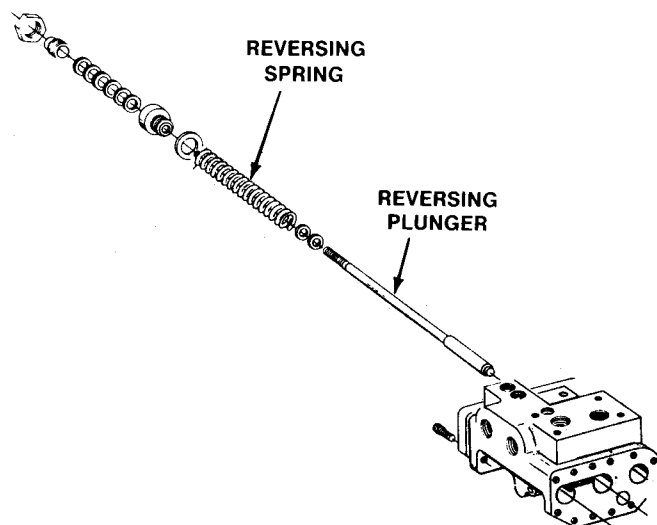
If the Chevron packing shows no signs of leakage, the brass packing gland, locknut and packing may remain intact within the steel adaptor nut.

8. Remove the reversing spring and plunger assembly.
9. Replace the reversing spring and inspect the plunger for scoring or abnormal wear.
10. Reinsert the spring and plunger assembly.
11. Reinstall the reversing plunger steel adaptor nut and compression washer.
12. Reinstall the Chevron packing (see "V" packing section) if necessary.
13. Thread the square block onto the reversing plunger with approximately an equal number of threads exposed.

NOTE

The filed corner of the block should be towards the valve body and the main plunger.

14. Place the washer over the reversing plunger.
15. Thread the nut onto the reversing plunger but do not tighten.

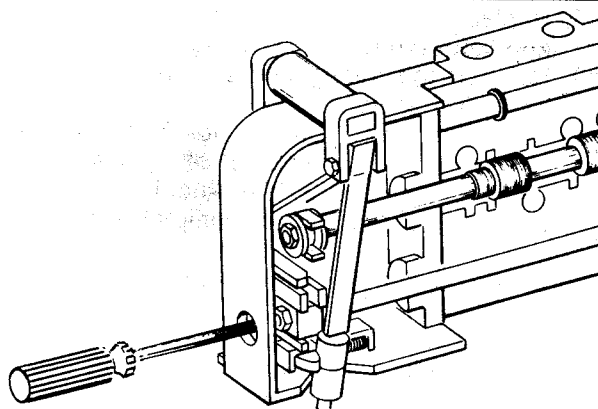


16. Install the bridge assembly.

NOTE

The final position of the bridge assembly should not restrict or bind the main spool travel.

17. Use a flat screwdriver to position the square block on the plunger shaft. Insert a flat blade screwdriver into the slot on the end of the plunger. Three quarters of an inch (3/4") should be exposed between the threaded end of the reversing plunger and the square block.
18. Torque the locknut onto the reversing plunger.
19. Reinstall the roller arm spring.
20. Replace the covers.

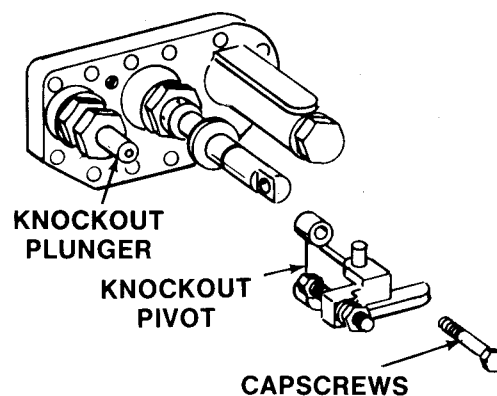


SERVICE AND REPAIR

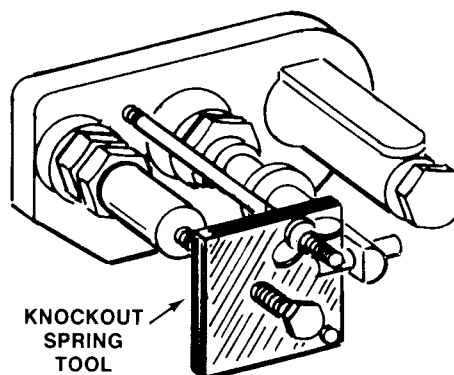
REMOVAL OF THE KNOCKOUT SPRING

Operational Status			
Truck	Off	Keys	Removed

1. Remove the studs and the control section cover from the valve end plate.
2. Remove the control rod from the main spool nut.
3. Remove the knockout pivot assembly from the valve end plate by removing the two (2) cap-screw from the valve end plate.



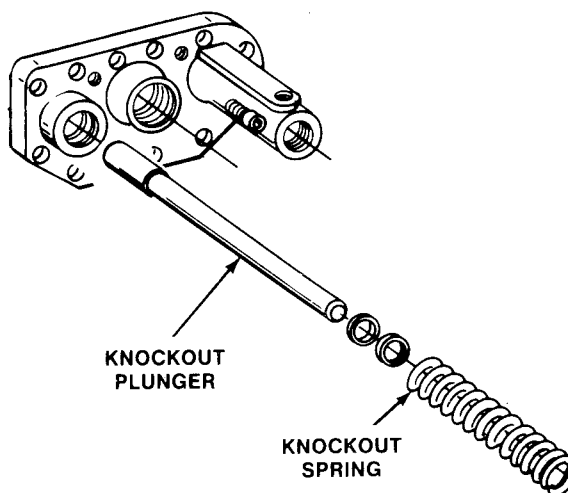
4. Install Leach T-B19516-6 knockout spring tool.
 - A. Shift the main spool completely towards the control rod.
 - B. Insert the pin of the tool into the opening of the main spool nut.
 - C. Install the tool studs into the knockout pivot assembly mounting holes of the valve end plate.
5. Place the tool cap over the end of the knockout plunger.
6. Tighten the tool hexhead capscrew against the cap.
7. Loosen the steel adaptor nut and compression washer. If the Chevron packing shows no signs of leakage the brass packing gland, locknut, and packing may remain intact within the steel adaptor nut.



NOTE

The knockout spring is continually under tension. This tool allows controlled release of the knockout spring tension and contains the adaptor nut.

8. Rotating the tool capscrew counter-clockwise slowly releases the tension of the spring as the steel adaptor nut is removed from the valve end plate.
9. Remove the knockout spring tool and remove the steel adaptor nut and the compression washer.
10. Remove the knockout plunger and spring assembly.
11. Replace the knockout spring and inspect the knockout plunger for scoring or abnormal wear.
12. Reinsert the spring and plunger assembly into the valve body.
13. Place the steel adaptor nut and compression washer over the knockout plunger and spring.
14. Install Leach T-B19516-6 knockout spring tool.
 - A. Shift the main spool completely towards the control rod.
 - B. Insert the pin of the tool into the opening of the main spool nut.
 - C. Install the tool studs into the knockout pivot assembly mounting holes of the valve end plate.



15. Place the tool cap over the end of the knockout plunger.
16. Tighten the tool capscrew against the cap. Rotate clockwise while tightening the knockout steel adapter nut and compression washer.

NOTE

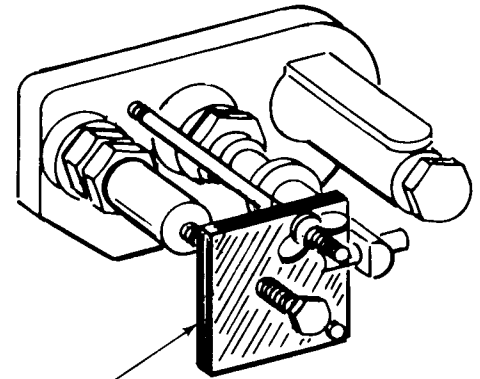
The knockout spring must be compressed to thread and tighten the steel adapter nut.

17. Remove the knockout spring tool.
18. Reinstall the Chevron packing (see "V" packing section) if necessary.
19. Reinstall the knockout pivot assembly.

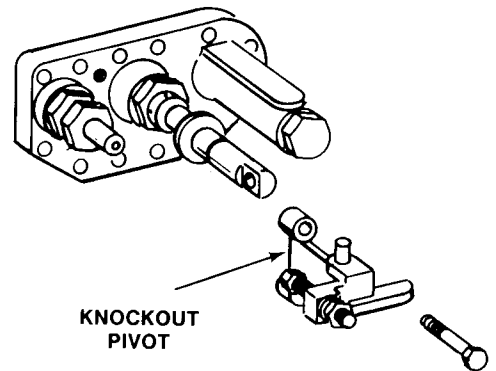
NOTE

With the main spool shifted right towards the control rod the knockout assembly adjusting bolt should have a minimum of 1/8" clearance from the knockout plunger.

20. Reinstall the control rod into the main spool nut.
21. Reinstall the studs and cover.



KNOCKOUT
SPRING
TOOL



KNOCKOUT
PIVOT

OIL JET REPLACEMENT

Operational Status

Truck	Off	Keys	Removed

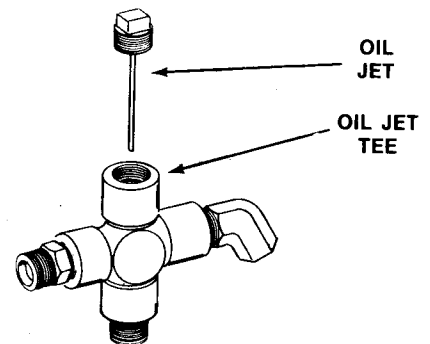
The oil jet is a meter designed to control the flow of fluid escaping from the reversing plunger chamber. The jet is inserted into a tee fitting containing an orifice fitting which is routed into a return to the tank port. To replace the oil jet:

1. Remove the pipe plug/oil jet assembly.
2. Measure the replacement oil jet.

NOTE

The replacement oil jet should be approximately 1-3/4" to 1-7/8" in length.

3. Insert the new oil jet into the fitting and tighten.



OIL
JET

OIL JET
TEE

SERVICE AND REPAIR

CHECK VALVE REPLACEMENT

Operational Status			
Truck	Off	Keys	Removed

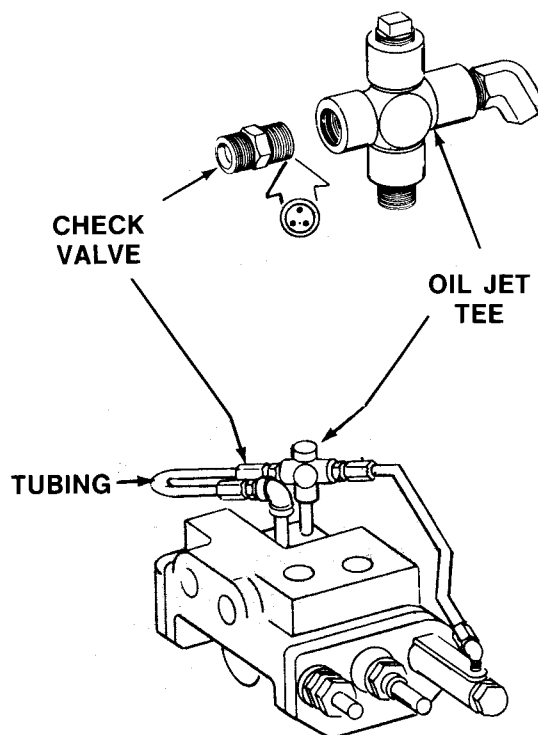
The check valve is threaded into the tee fitting containing the oil jet. The check valve insures that fluid escaping from the reversing plunger chamber is directed back into the hydraulic tank. This check valve is composed of a spring, a ball, and a backing plate.

1. Remove the "U" shaped tubing from the check valve and coupling.
2. Remove the check valve.

NOTE

The check ball should be visible within the fitting. The oil jet or a paper clip may be inserted into the fitting to test the spring tension or clean the seat of the fitting.

3. If the check valve is not intact remove the screw plug from the end of the reversing plunger chamber.
4. Inspect the cavity for the check valve components (check ball or spring pieces).
5. Lubricate the o-ring and install the screw plug.
6. Install the replacement check valve.
7. Install the "U" shaped tubing.



MOV PRESSURE ADJUSTMENTS

REVERSING PLUNGER EXTERNAL ADJUSTMENT

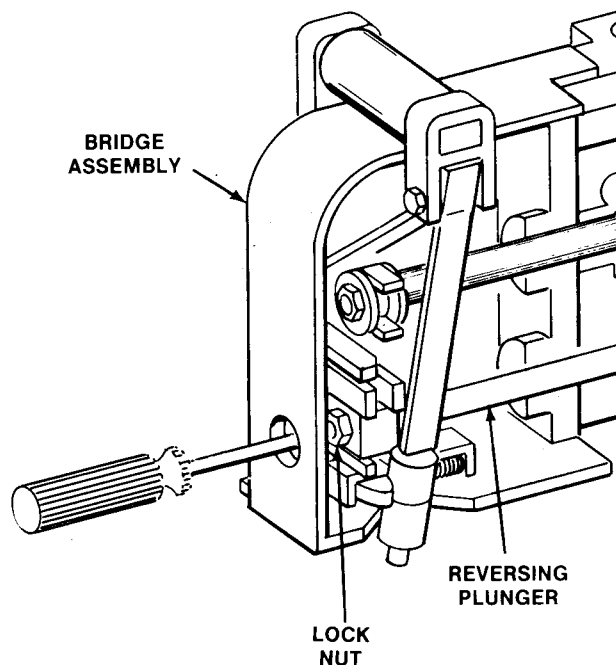
Operational Status			
Truck	Off	Keys	Removed

The reversing pressure may be adjusted slightly, externally, by repositioning the square block's location on the reversing plunger. Three quarters of an inch (3/4") of exposed threads between the end of the plunger and the square block is approximately 1200 psi. To externally increase the reversing pressure:

1. Loosen the locknut on the reversing plunger.
2. Using a flat head screwdriver, rotate the reversing plunger counter-clockwise to increase the number of threads between the end of the reversing plunger and the square block. This increases the distance the reversing plunger must travel before contacting the reversing finger. The maximum adjustment is 50 psi.

NOTE

Threading the square block completely onto the reversing plunger will eliminate the reversing function. Moving the square block in this direction lowers the trip finger, which may not allow the reversing function to occur.

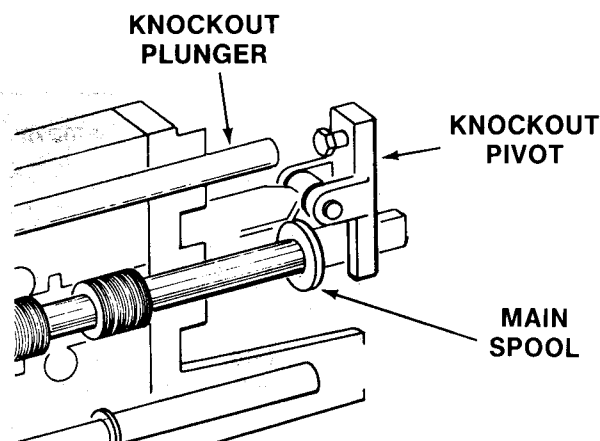


SERVICE AND REPAIR

3. To decrease reversing pressure, rotate the reversing plunger clockwise to decrease the number of threads between the end of the reversing plunger and the square block. This decreases the distance the reversing plunger must travel before contacting the reversing finger. The maximum adjustment is 50 psi.

NOTE

Adjustment of the square block directly affects the height of the trip finger. Threading the square block outward raises the trip finger and may hinder or eliminate the knockout function.

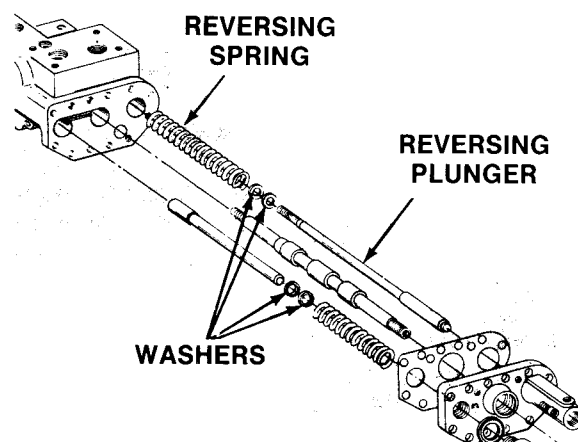
**REVERSING PLUNGER INTERNAL ADJUSTMENT**

Operational Status			
Truck	Off	Keys	Removed

To adjust the reversing function further, washers must be inserted internally (see reversing spring replacement). Thin washers, 1/16", approximate 25 psi and 1/8" thick washers approximate 50 psi.

NOTE

No more than four (4) washers should be used or plunger travel becomes insufficient. If four (4) or more washers are required, change the reversing spring. At least 2½ washers are required at all times.

**KNOCKOUT PLUNGER**

Operational Status			
Truck	Off	Keys	Removed

Slight external adjustment of the knockout pressure is possible by repositioning the capscrew located on the pivot arm of the knockout pivot assembly. The same number of threads exposed approximates 1400 psi.

INCREASE

1. Remove the lock nut on the pivot arm.
2. Thread the capscrew clockwise to increase knockout pressure. The maximum adjustment: is 50 psi.
3. Install the locknut.

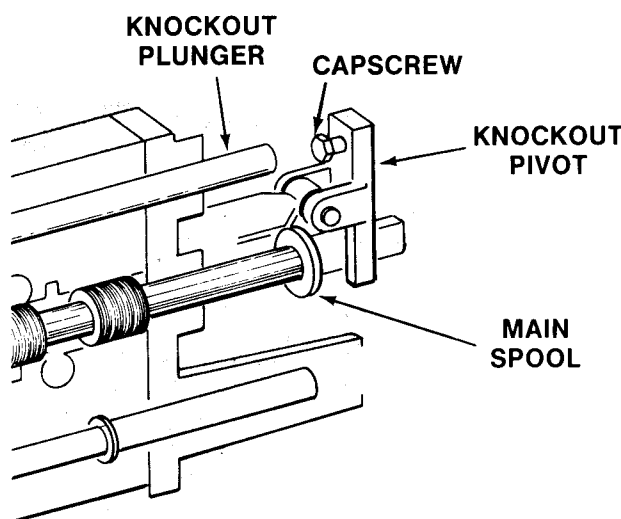
DECREASE

1. Remove the locknut on the pivot arm.
2. Thread the capscrew counter-clockwise to decrease knockout pressure. The maximum adjustment: is 50 psi.

NOTE

A minimum of 1/8" clearance between the adjusting capscrew and the knockout plunger must be present.

3. Install the locknut onto the adjusting bolt.



SERVICE AND REPAIR

INTERNAL ADJUSTMENT

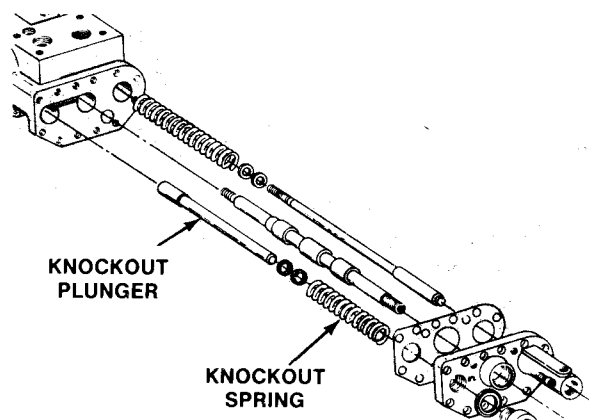
Operational Status

Truck	Off	Keys	Removed
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To adjust the knockout function further washers must be inserted internally (see knockout spring replacement). 1/16" washers approximate 25 psi and 1/8" thick washers approximate 50 psi.

NOTE

No more than four (4) washers should be used or plunger travel becomes insufficient. If four (4) or more washers are required, change the knockout spring. At least 2 washers are required at all times.



BRIDGE ASSEMBLY MECHANICAL INSPECTION AND ADJUSTMENT

ROLLER ARM ASSEMBLY AND MAIN SPOOL

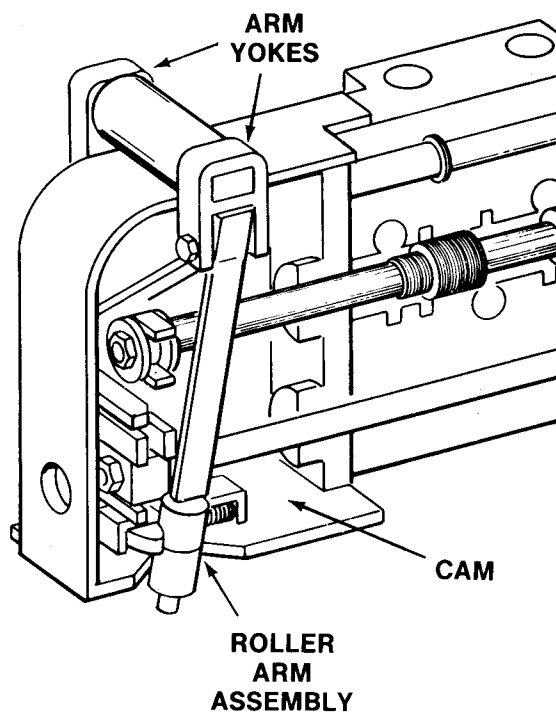
The single and double roller arms are connected to both arm yokes by means of capscrews which are threaded into the arm yokes. Nylock nuts are threaded onto the ends of the capscrews. The double roller arm is beveled at the arm yoke and contains twin rollers. The outer roller rides on the cam and the inner roller provides a contact surface for the trip finger. The single roller arm is square at the arm yoke and contains a single roller which rides on the cam. The single and double arm yokes are connected by an arm yoke pin. This pin allows a limited distance of travel for the single and double roller arms. The main spool is connected to the roller arms by the main spool yoke and collar.

INSPECTION

Operational Status

Truck	Off	Keys	Removed
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1. Remove the roller arm spring. The spring tension should be strong. If not, see repair #1.
2. The single and double roller arms should move freely up and down. If not, see repair #2.
3. The single and double roller arms should move evenly together and rollers ride on the cam "steps." If not, see repair #3. Little or no side play should be present.
4. The arm yokes should be tight on the arm yoke pin. If not, see repair #4.
5. The rollers should not be excessively worn. If worn, see repair #5.
6. The main spool collar and yoke should pivot freely. The main spool should shift smoothly by hand. If not, see repair #6.
7. The transition from "notch" to "step" on the cam should be clean. If not, see repair #7.



REPAIR

Operational Status			
Truck	Off	Keys	Removed

1. Replace the spring.
2. Loosen the capscrew until the arms move freely up and down.
3. Tighten the capscrew until side play is removed, but arms still hang freely.
Remove the double and single arms and bend both until they are parallel and required travel is achieved.
4. A. Place the arms in the neutral position.
B. Flatten the ends of the arm yoke pin.
C. Spot weld the arm yoke to the arm yoke pin.

NOTE

The double roller arms must face the notched section of the bridge.

NOTE

Do not continuous weld the arm yoke to the arm yoke pin.

5. Replace the rollers.
6. Reduce the torque on the main spool locknut.
Position the stake mark towards the square block.
7. Replace the bridge.

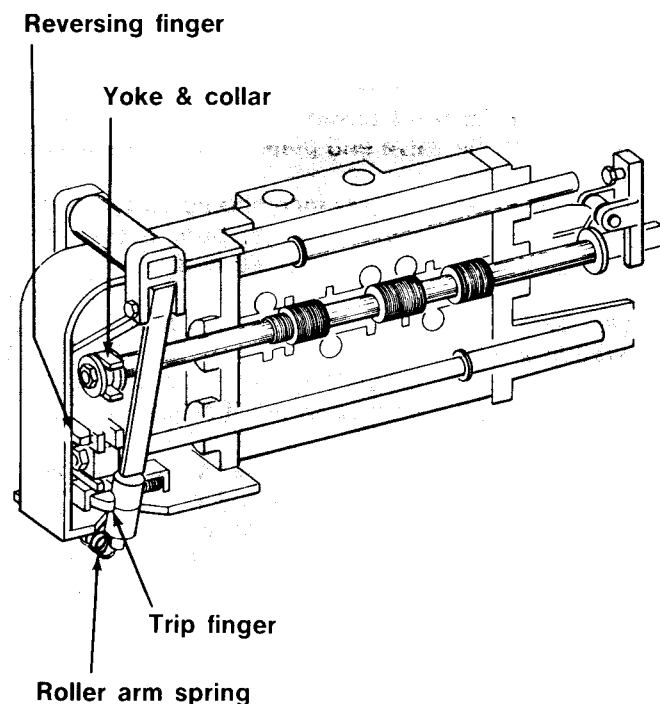
REVERSING MECHANICAL COMPONENTS

The reversing plunger drives the square block which rides inside the pivot block/trip finger assembly.

INSPECTION

Operational Status			
Truck	Off	Keys	Removed

1. The square block should ride smoothly with the channels of the pivot block. If not see repair #1.
2. The trip finger should contact the inside roller during the reversing function and rest slightly below the roller after completion of the reversing function. The trip finger should show no signs of excessive wear. If not see repair #2 and #3.
3. The reversing finger should pivot freely on the mounting capscrew, and show no signs of excessive wear. If not see repair #4 and #5.



SERVICE AND REPAIR

REPAIR

Operational Status			
Truck	Off	Keys	Removed

1. Replace the pivot block.
2. Adjust the height of the trip finger by rotating the reversing plunger. Counter-clockwise rotation of the reversing plunger lowers the trip finger, clockwise rotation raises the trip finger.

NOTE

Rotation of the reversing plunger repositions the square block and affects reversing pressure.

3. Replace the trip finger.

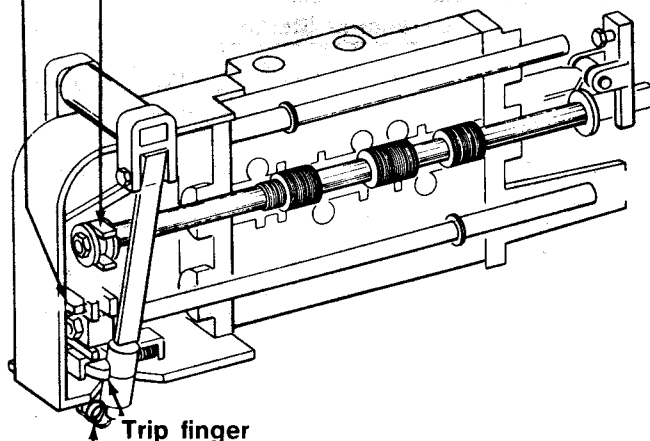
NOTE

The replacement trip finger may require minor adjustments.

4. Reduce the torque on (no pivot) the mounting capscrew.
5. Replace the trip finger.

Reversing finger

Yoke & collar



Roller arm spring

NOTE

If all the components exhibit excessive wear replace the entire bridge assembly.

KNOCKOUT MECHANICAL COMPONENTS

The knockout plunger drives the knockout pivot into the main spool washer and shifts the main spool into neutral. To inspect, remove the control section cover and shift the main spool to the right.

INSPECTION

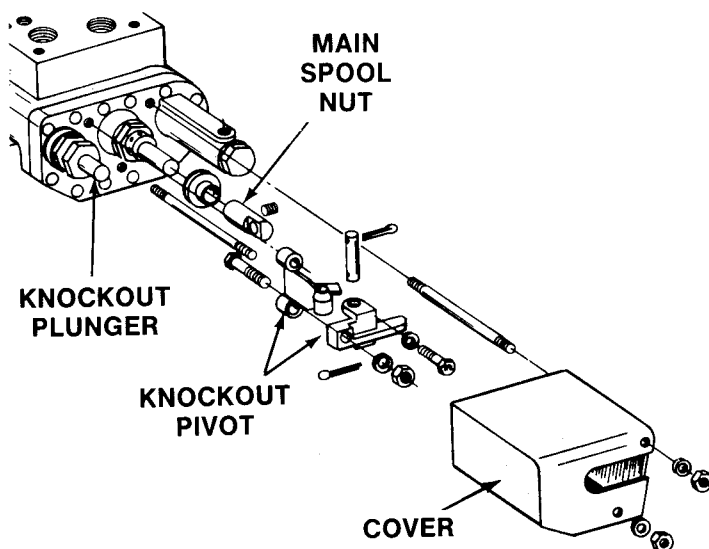
Operational Status			
Truck	Off	Keys	Removed

1. The knockout pivot assembly should be firmly mounted to the valve end plate. If not see repair #1.
2. A minimum of 1/8" clearance should be present between the knockout plunger and pivot arm capscrews. If not see repair #2 & 3.

NOTE

Standard position is an equal number of threads exposed.

3. The opening in the main spool nut should not show signs of excessive wear. If not see repair #4.
4. The main spool washer should not show signs of excessive wear. If not see repair #5.
5. The main spool nut Allen set screw should be 180° from the pivot arm. If not see repair #6.



REPAIR

Operational Status			
Truck	Off	Keys	Removed

1. Replace the knockout pivot assembly capscrews and properly torque.
2. Remove the locknut and adjust the capscrew. Clockwise rotation increases clearance, counter-clockwise rotation decreases clearance.
3. Replace the capscrew and install locknut.
4. Replace the main spool nut.
5. Replace the main spool washer.
6. Rotate the main spool 180° to clear the knockout pivot arm.

SERVICE AND REPAIR

DESCRIPTION AND REMOVAL OF SPC VALVE

SPC stands for sequence pilot check. It is a valve block with a sequence valve in cartridge form which is pre-set at the factory to control the sequence and timing of the clamping system.

A pilot check portion is included within the valve. The pilot check keeps the clamp mechanism in a locked position and does not allow the clamp cylinder to release until the pushout lever is shifted to pressurize the pilot section.

Operational Status			
Truck	Off	Keys	Removed

1. To remove the SPC valve disconnect all the hydraulic lines at the valve and cap.
2. Remove the capscrew, lockwasher and nut.
3. Move the SPC valve to a work bench area so further examination can be done if necessary.

DISASSEMBLY OF SEQUENCE VALVE CARTRIDGE.

1. Clean the area around the sequence cartridge with solvent to prevent contamination.
2. Turn the sequence cartridge nut counterclockwise until the cartridge can be removed.
3. Replace the cartridge with a new one if defective. See Sec. 7 CHECK-OUT, check the sequence valve pressure.
4. If just the o-rings need replacing, use a seal.
5. If a valve cartridge is not readily available for replacement, plug or cap the threaded orifice to prevent contamination until one is available.

INSPECTION AND REPLACEMENT OF SEQUENCE CARTRIDGE

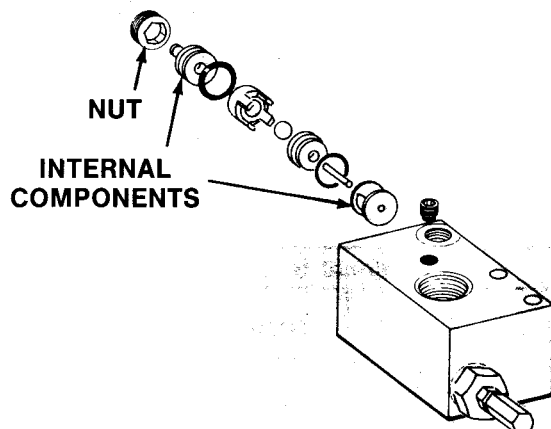
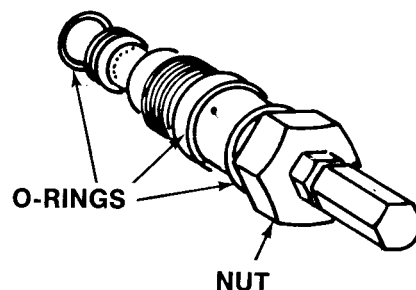
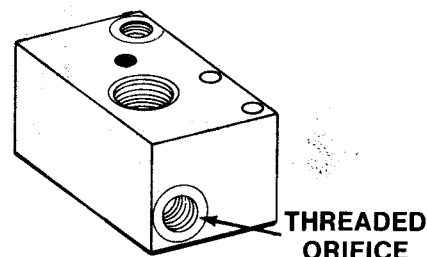
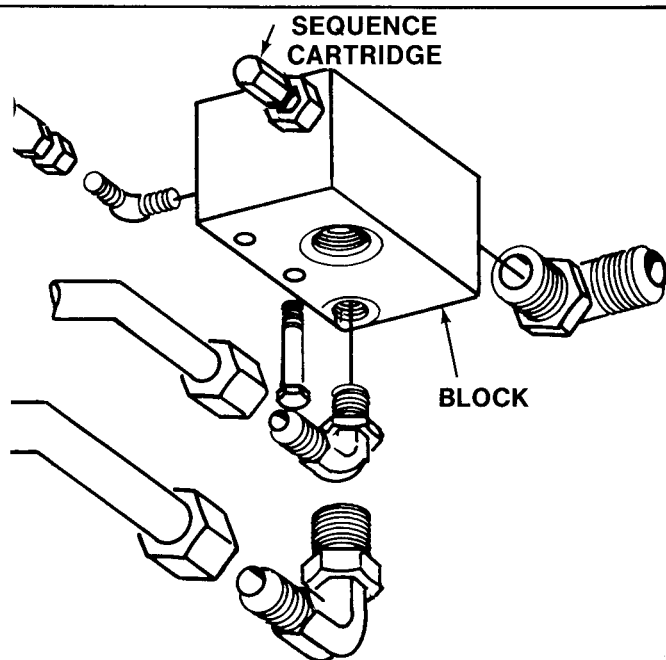
1. Inspect all parts for damage or excessive wear (replace defective parts).
2. Replace all o-rings every time a cartridge is removed.

NOTE

Do not operate the unit without the cartridge installed.

DISASSEMBLY OF BALL CHECK

1. Clean the area around the plug with solvent to prevent contamination.
2. Remove nut with a plug wrench (See Sec. 11, SPECIAL TOOLS).
3. Remove the internal components as shown.



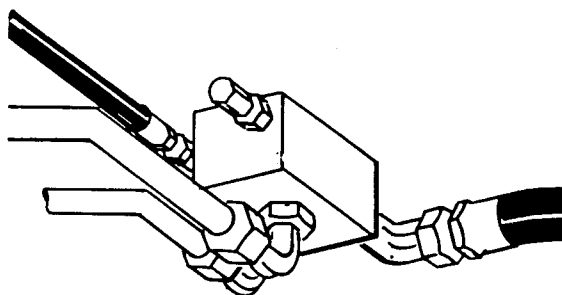
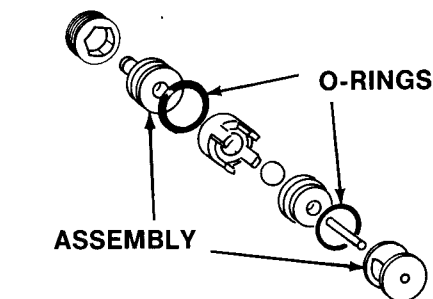
SERVICE AND REPAIR

INSPECTION AND REPLACEMENT OF BALL CHECK ASSEMBLY

1. Inspect all parts for damage or excessive wear, replace defective parts.
2. Replace all o-rings every time the ball check is disassembled.
3. If any part of the check is worn, excluding the o-rings the complete assembly must be replaced. Only the o-rings can be replaced separately.

REASSEMBLY AND INSTALLATION OF SPC VALVE.

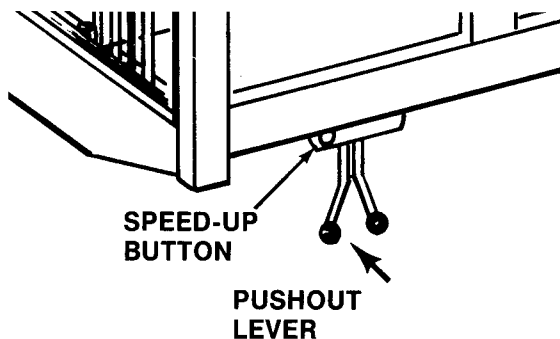
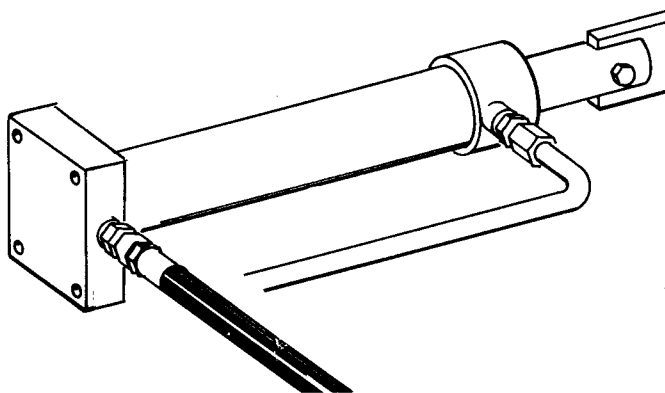
1. When replacing the complete assembly or just the o-rings, always check the components for sharp edges or burrs.
2. Coat all the parts with hydraulic fluid before inserting them into the valve body.
3. Reassemble the parts in the reverse order of disassembly.
4. Install in reverse order of removal.



DESCRIPTION OF PUSHOUT CYLINDER

This hydraulic cylinder works in conjunction with the clamp cylinder to provide the rearward motion of the pushout plate during the unloading cycle.

The pushout cylinder rod, which is connected to the pushout bar, is fully retracted into the pushout cylinder. Next the clamp cylinder is engaged, locking the pushout plate to the pushout bar. Then the pushout cylinder is extended causing the pushout plate to move rearward toward the tailgate opening. Prior to retracting the pushout cylinder, the clamp cylinder is released. As the pushout cylinder is retracted, the pushout bar slides through the now released clamp mechanism. This cycle can be repeated as many times as necessary to eject the load.



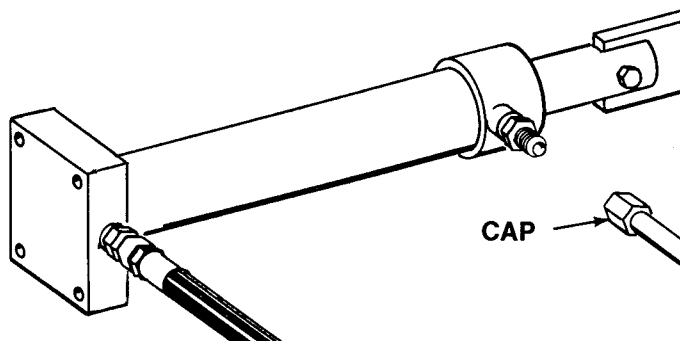
TEST FOR LEAKING PUSHOUT CYLINDER

Operational Status					
Truck	Running	PTO	Engaged	Sol. Sw.	On

1. Depress the speed-up button and move the pushout lever (inward) to fully extend the pushout cylinder.

Operational Status			
Truck	Off	Keys	Removed

2. Disconnect and cap the hydraulic tube at the rod end of the pushout cylinder.



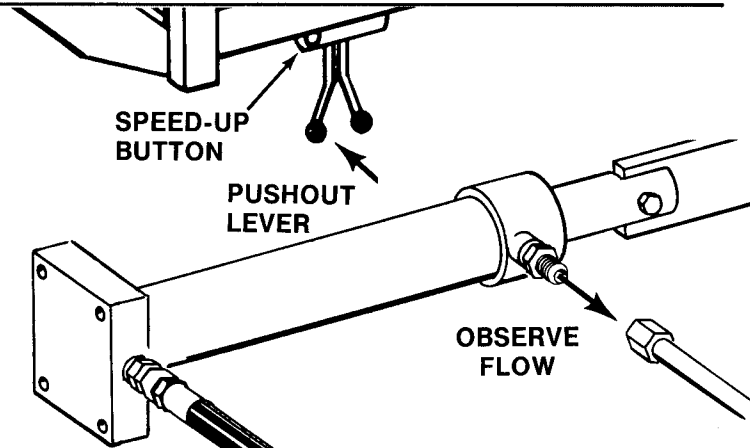
SERVICE AND REPAIR

Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
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- Again depress the speed-up button and move the pushout lever (inward) as if extending the pushout cylinder. Hold the lever in position while observing the fluid flow from the open cylinder port.

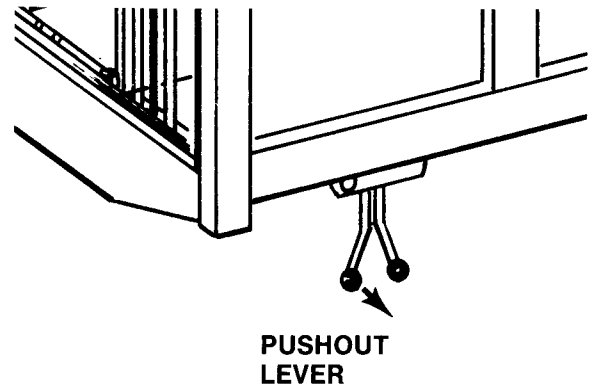
The flow of hydraulic fluid should be no more than 12 fluid ounces per minute. A flow greater than 12 ounces indicates an excessive piston seal leak. If the cylinder does not leak excessively, continue the test.



Operational Status

Truck	Off	Keys	Removed
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- Reconnect the hydraulic tube to the rod end of the pushout cylinder.



Operational Status

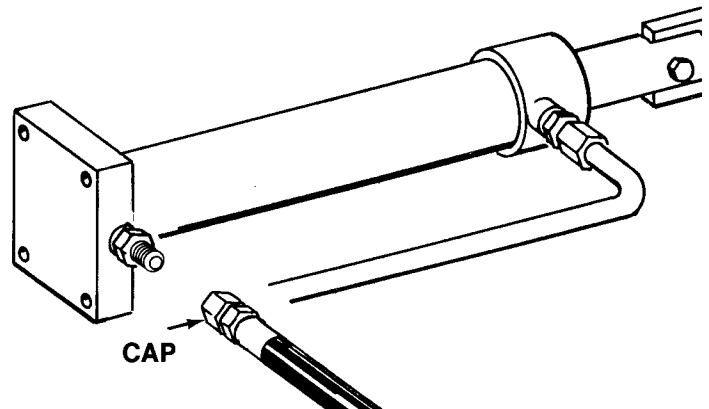
Truck	Running	PTO	Engaged	Sol. Sw.	ON
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- Pull the pushout lever outward to fully retract the cylinder.

Operational Status

Truck	Off	Keys	Removed
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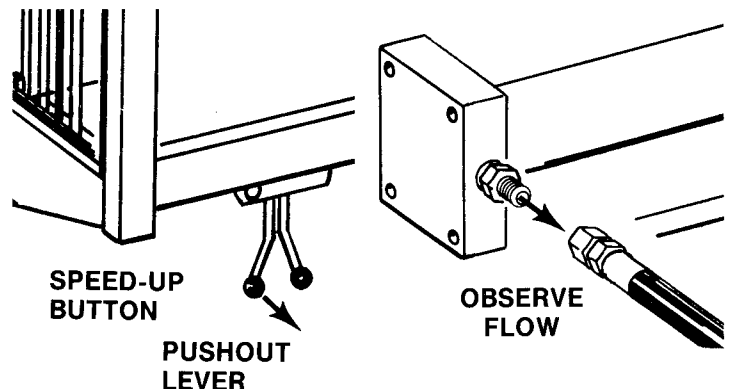
- Disconnect and cap the hydraulic hose at the case end of the pushout cylinder.



Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
-------	---------	-----	---------	----------	----

- Pull and hold the pushout lever (outward) as if to retract the pushout bar and observe the fluid flow from the open cylinder port. The flow of hydraulic fluid should be no more than 12 fluid ounces per minute. A flow greater than 12 ounces indicates an excessive piston seal leak. Remove and disassemble the cylinder as described later in this section.
- If the cylinder does not leak excessively re-connect the hydraulic hose to the case end of the cylinder.

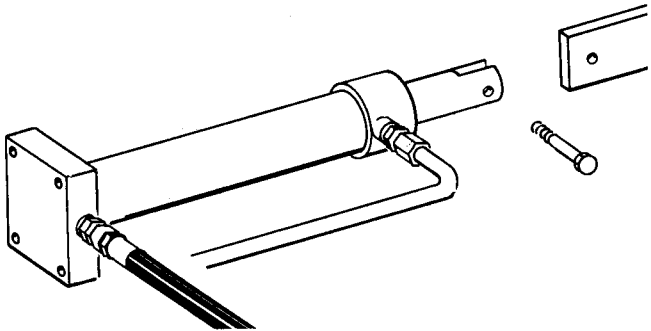


SERVICE AND REPAIR

REMOVAL OF PUSHOUT CYLINDER

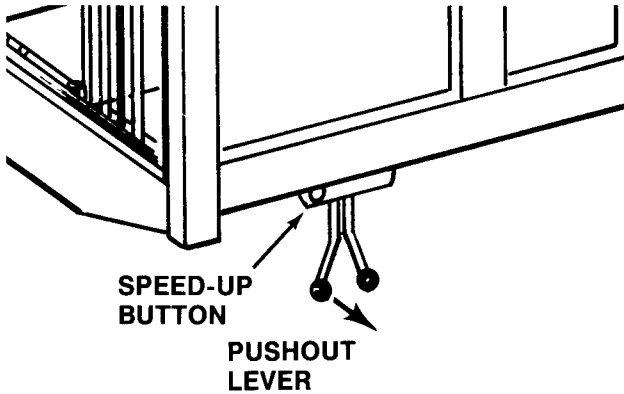
Operational Status			
Truck	Off	Keys	Removed

- 1. Remove the capscrew from the pushout cylinder piston rod.
- 2. Disengage the bar.



Operational Status					
Truck	Running	PTO	Engaged	Sol. Sw.	On

- 3. Pull outward on the pushout lever to fully retract the pushout cylinder.



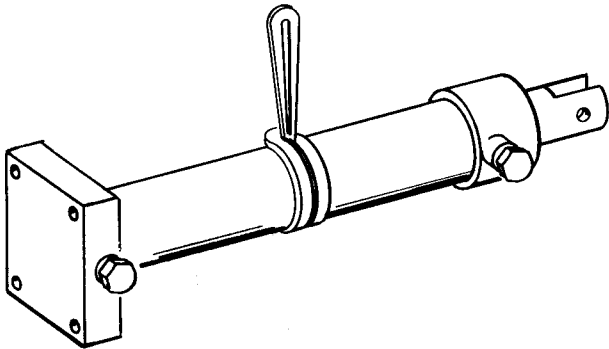
Operational Status			
Truck	Off	Keys	Removed

- 4. Disconnect the hose, tube and elbow fittings from the pushout cylinder. Cap and plug the tube, hose and cylinder ports.
- 5. Remove the capscrews, lockwashers and nuts from the cylinder mounting flange.
- 6. Secure a nylon sling around the cylinder as shown and attach to a suitable lifting device with a minimum lifting capacity of 500 lbs.

NOTE

See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

NYLON SLING



- 7. Remove the cylinder from the body using care to avoid damaging the surrounding hydraulic lines.

DISASSEMBLY OF PUSHOUT CYLINDER

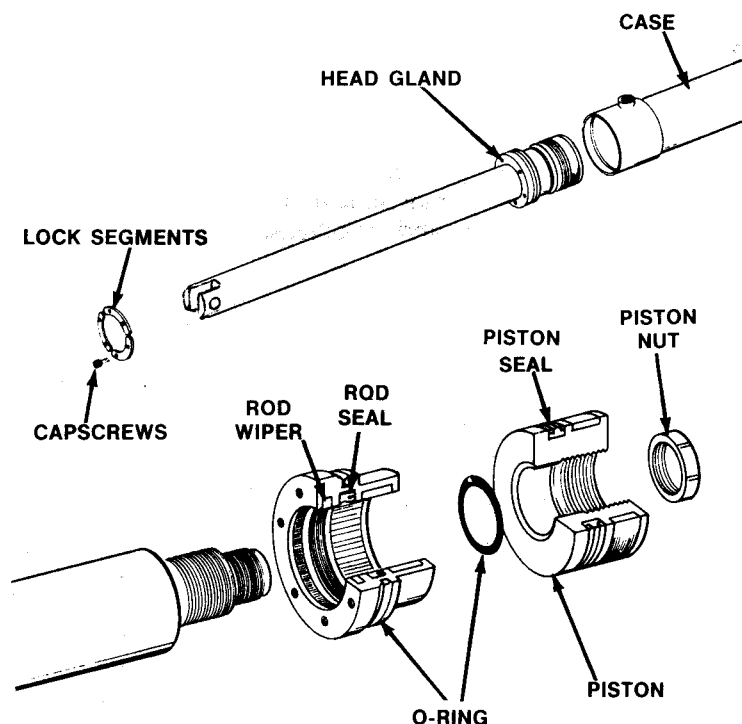
Operational Status			
Truck	Off	Keys	Removed

1. Remove grease fittings, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Section 4, General Repair Practices, before proceeding to disassemble the cylinder.
2. Secure the case end of the cylinder to the floor or workbench.
3. Secure the rod end of the cylinder to an overhead lifting device with a minimum lifting capacity of 500 lbs.
4. Remove the six (6) capscrews and lockwashers and three (3) lock segments securing the head gland to the cylinder.

NOTE

Use an electric drill with an internal grinding wheel to remove any burrs from the internal groove on the cylinder case. Otherwise the cylinder may be difficult to take apart.

5. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.



INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.
2. A new rod wiper, rod seal, O-rings, and U-cups must be installed anytime the cylinder is disassembled. Pay particular attention to the way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

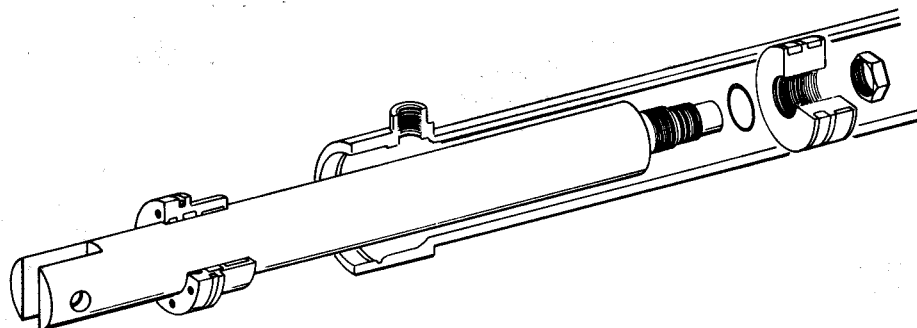
Reassemble and install the cylinder in the approximate reverse order of disassembly.

NOTE

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.

NOTE

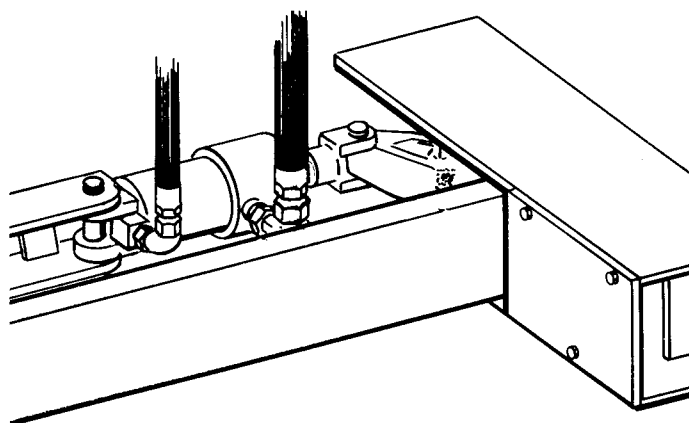
Special tools, listed in Section 11, may be necessary to properly reassemble the cylinder.



SERVICE AND REPAIR

DESCRIPTION OF PUSHOUT CLAMP MECHANISM

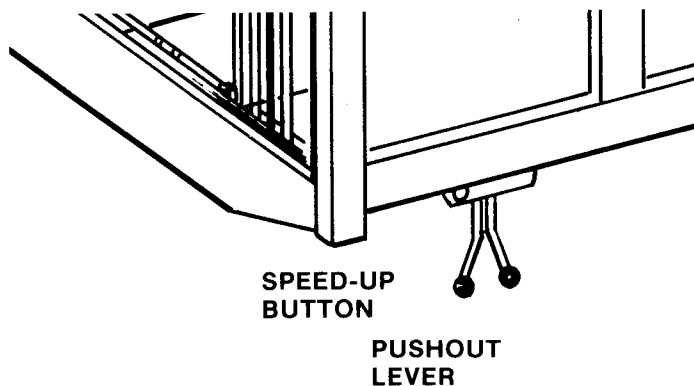
The clamp mechanism, in conjunction with the clamp cylinder, "locks" or clamps the pushout plate to the pushout bar. The bar is automatically "clamped" during the unloading operation prior to the pushout cylinder being extended. Proper maintenance of the clamp mechanism is important to achieve proper loading and unloading of the unit.



CHECK WEAR POINTS

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

1. Briefly move the pushout lever inward and release. (This will automatically engage the clamp mechanism.) Do not pull back on the lever as this will disengage the clamp.



Operational Status			
Truck	Off	Keys	Removed

2. If the clamp cylinder stroke is 2-1/2 inches or more, it is an indication of worn parts. The clamp cylinder rod clevis may be adjusted outward to maintain a stroke of less than 2-1/2 inches.
3. If the clamp lever travels to an over-center position (beyond parallel with the pushout base weldment) it is also an indication of worn parts. Add shims behind the stationary block or replace the half bearings, rocker or moving block to eliminate the over-center travel.

NOTE
Rod stroke is measured from the point where the threads begin to the face of the head gland.

ROD CLEVIS

NOTE

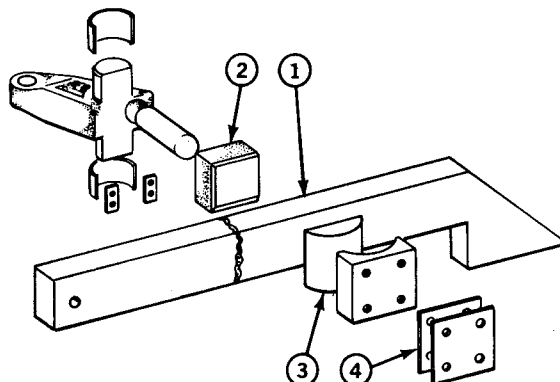
Over-center travel of the clamp lever results in a side load on the moving block and possibly ineffective clamping action.

2 1/2"

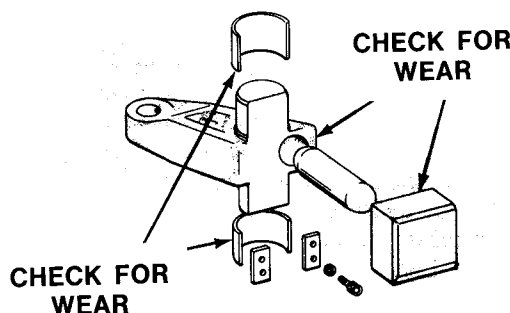
4. Visually check the pushout bar (1), moving block (2) and shoe (3). Wear in these areas, if not excessive, can be compensated for by adding shims (4) (available from your Leach distributor).

NOTE

These parts can be more closely inspected if the clamp mechanism is to be disassembled.



5. Visually check for wear at the points the rocker contacts the clamp lever and moving block. If worn these parts must be replaced.
6. The half bearings must be visually checked and replaced if worn. However, the clamp mechanism must be partially disassembled, as described next, to remove the half bearings.
7. Check for bent or broken structural parts on the pushout plate base weldment.



DISASSEMBLY AND REMOVAL OF CLAMP MECHANISM

Operational Status

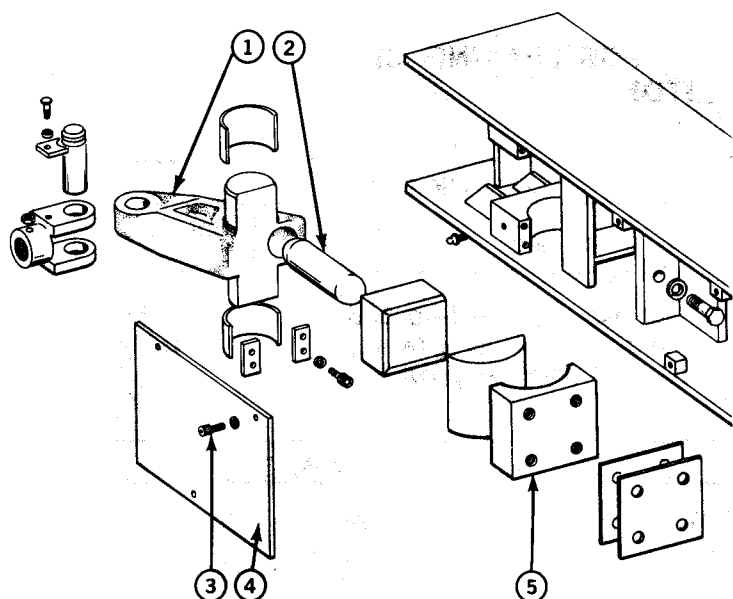
Truck	Running	PTO	Engaged	Sol. Sw.	On
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1. Disengage the clamp mechanism by pulling the pushout lever outward.

Operational Status

Truck	Off	Keys	Removed
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2. Remove the clamp cylinder as described next under REMOVAL OF CLAMP CYLINDER.
3. Pull the clamp lever (1) forward to remove the rocker (2).
4. Push the clamp lever rearward, slide to the right and then pull forward to remove.
5. Remove the four (4) capscrews with lockwashers (3) and the cover plate (4) to reach the stationary block (5).



NOTE

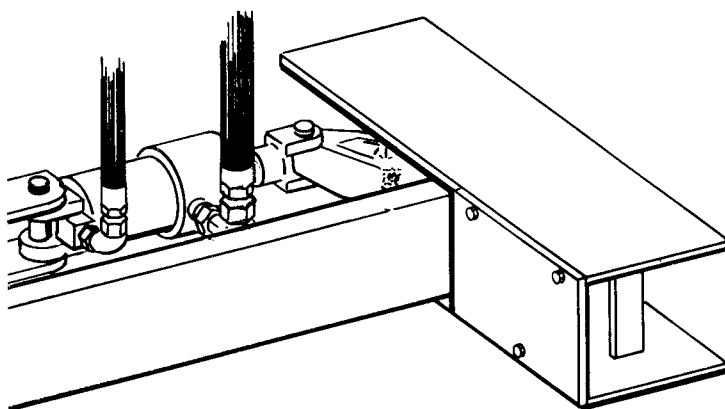
Prior to removing the clamp mechanism, check the wear points as described above.

INSPECTION AND REPLACEMENT OF CLAMP MECHANISM

Replace all excessively worn parts as determined by CHECKING WEAR POINTS.

REASSEMBLY AND INSTALLATION OF CLAMP MECHANISM

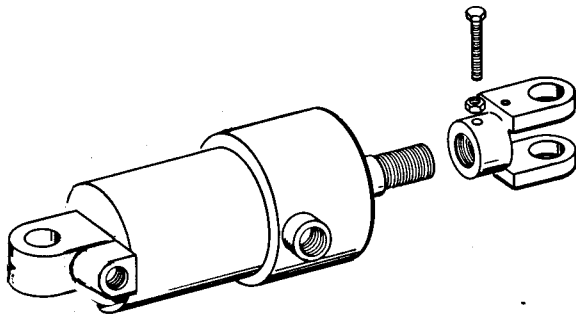
1. Reassemble and install the parts in the reverse order of disassembly.
2. Install the clamp cylinder as described under CLAMP CYLINDER Instructions.
3. After installation, lubricate the clamp mechanism as described in Section 6, PREVENTIVE MAINTENANCE.



SERVICE AND REPAIR

DESCRIPTION OF CLAMP CYLINDER

This hydraulically operated double acting cylinder is mounted on the pushout plate. It provides the force necessary to clamp the pushout plate to the pushout bar during the pushout cylinder extension stroke. When the pushout cylinder is retracted the clamp cylinder also retracts. The pushout plate is released from the pushout bar. The pushout bar now slides through the pushout plate.



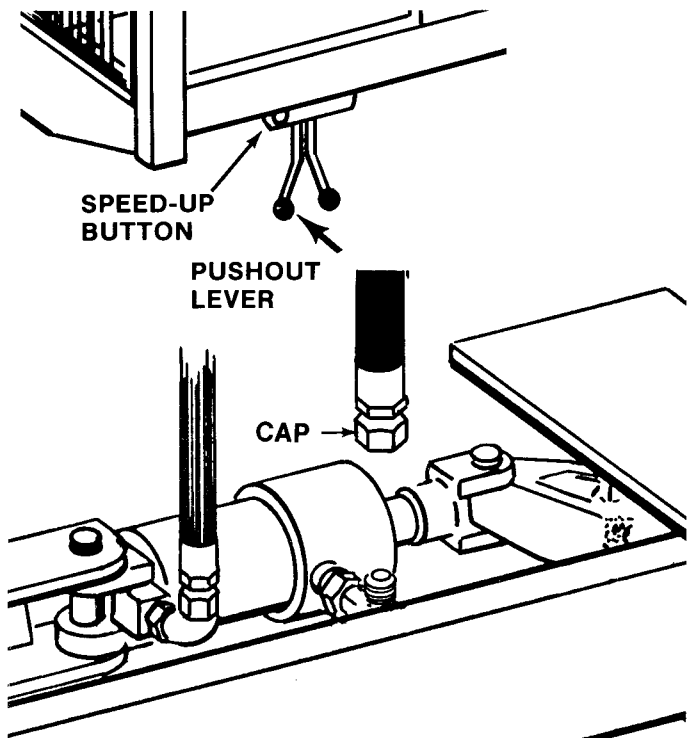
TEST FOR LEAKING CLAMP CYLINDER PISTON SEAL

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

- Depress the speed-up button. Push and hold the pushout lever (inward) to fully extend the pushout and clamp cylinders.

Operational Status			
Truck	Off	Keys	Removed

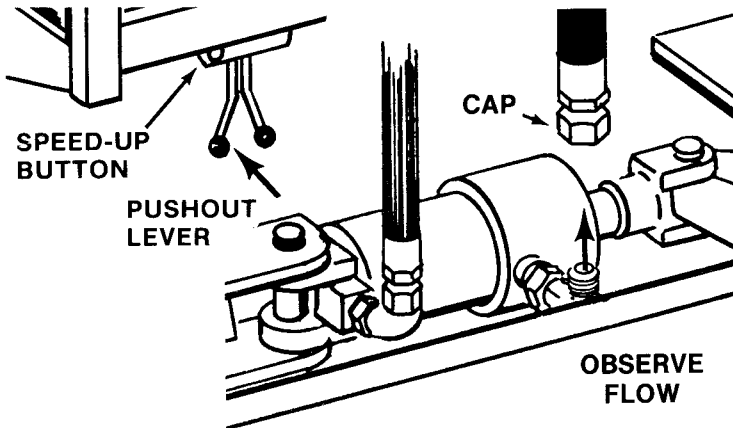
- Disconnect and cap the hydraulic hose at the rod end of the clamp cylinder.



Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

- Again depress the speed-up button and move the pushout lever inward as if extending the cylinders. Hold the lever in this position while observing the fluid flow from the open cylinder port.

The flow of hydraulic fluid should be no more than 12 fluid ounces per minute. A flow greater than 12 ounces indicates an excessive piston seal leak. If the cylinder does not leak excessively, continue the test.

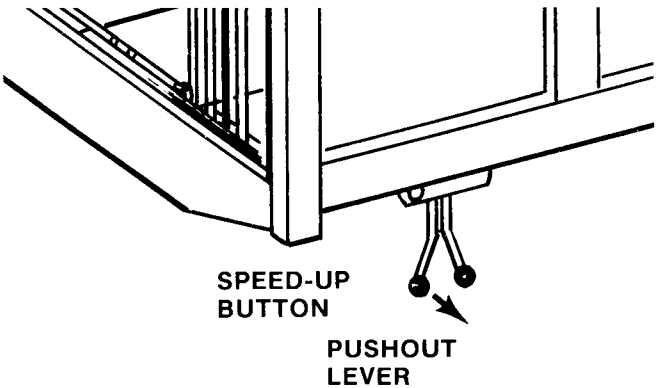


Operational Status			
Truck	Off	Keys	Removed

4. Reconnect the hydraulic line to the rod end of the cylinder.

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

5. Depress the speed-up button. Pull and hold the pushout lever (outward) to fully retract the push-out and clamp cylinders.

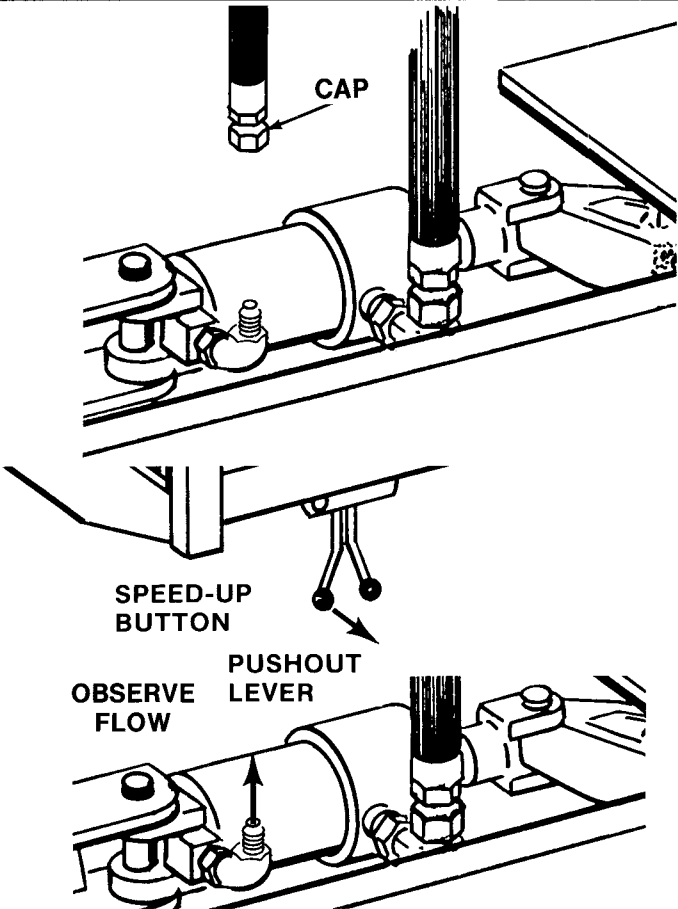


Operational Status			
Truck	Off	Keys	Removed

6. Disconnect and cap the hydraulic hose at the case end of the clamp cylinder.

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

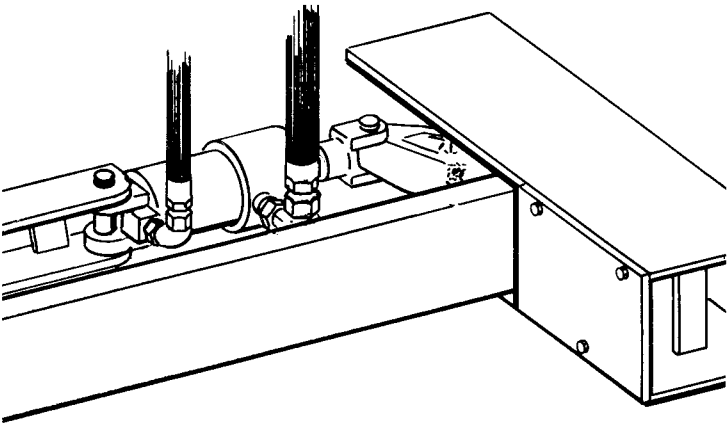
7. Again depress the speed-up button and pull the lever outward as if retracting the cylinders. Hold the lever in this position while observing the fluid flow from the open cylinder port. The flow of hydraulic fluid should be no more than 12 fluid ounces per minute. A flow greater than 12 ounces indicates an excessive piston seal leak. Remove and disassemble the cylinder as described later in this section.
8. If the cylinder does not leak excessively, reconnect the hydraulic hose to the cylinder.



REMOVAL OF CLAMP CYLINDER

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

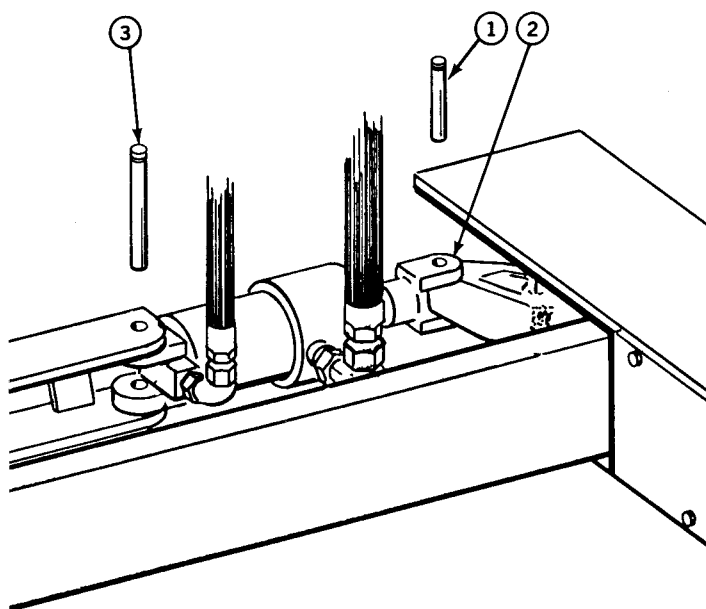
1. With the body empty of refuse, fully retract the pushout cylinder to ensure that the clamp is released.



Operational Status

Truck	Off	Keys	Removed
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2. Remove the capscrew, lockwasher, retainer and pivot pin (1) from the rod clevis (2).
3. Next remove the capscrew, lockwasher, retainer and pivot pin (3) from the cylinder base.
4. The cylinder may now be removed from the clamp area for disassembly of the clamp mechanism.
5. For complete clamp cylinder removal, release the trapped pressure in hoses by pushing and pulling the pushout lever. Then disconnect the hoses from the cylinder.
6. Cap the hoses and plug the cylinder ports.

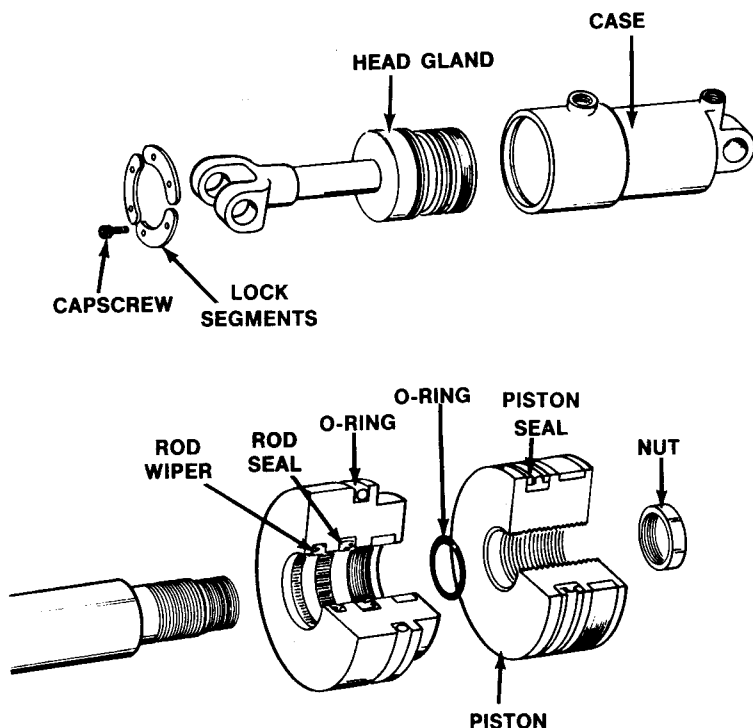


CAUTION

Loosen hydraulic fittings slowly to release pressure.

DISASSEMBLY OF CLAMP CYLINDER

1. Remove grease fittings, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Section 4, General Repair Practices, before proceeding to disassemble the cylinder.
2. Secure the case end of the cylinder to the floor or workbench.
3. Secure the rod end of the cylinder to an overhead lifting device with a minimum lifting capacity of 500 lbs.
4. Remove the six (6) capscrews, lockwashers, and three (3) lock segments.
5. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.
6. Unscrew the locking nut.
7. Unscrew the piston from the rod and remove the head gland.
8. Remove the rod seal, O-ring, second O-ring and U-cup.



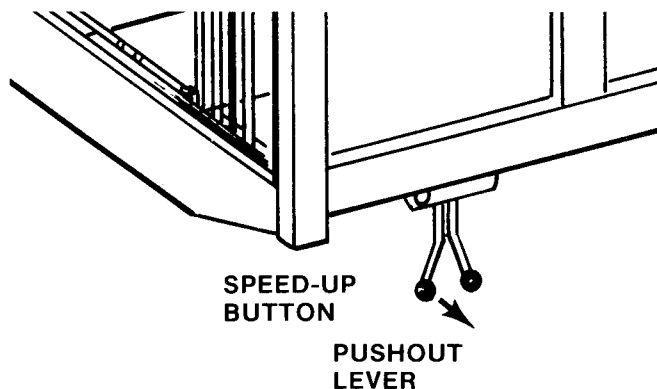
SERVICE AND REPAIR

Operational Status			
Truck	Off	Keys	Removed

- Reconnect the hydraulic line to the rod end of the cylinder.

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

- Depress the speed-up button. Pull and hold the pushout lever (outward) to fully retract the push-out and clamp cylinders.

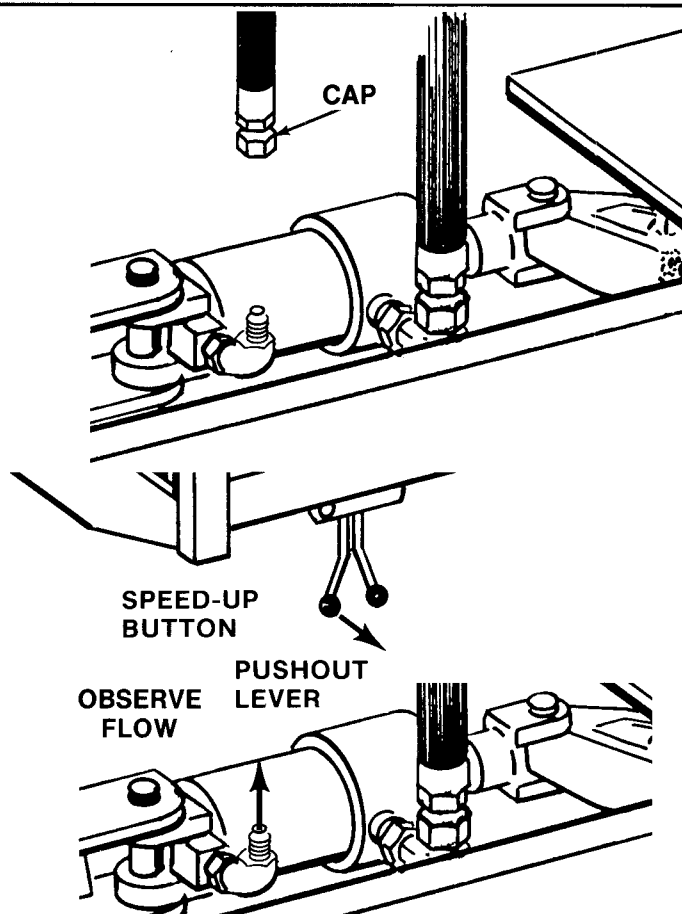


Operational Status			
Truck	Off	Keys	Removed

- Disconnect and cap the hydraulic hose at the case end of the clamp cylinder.

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

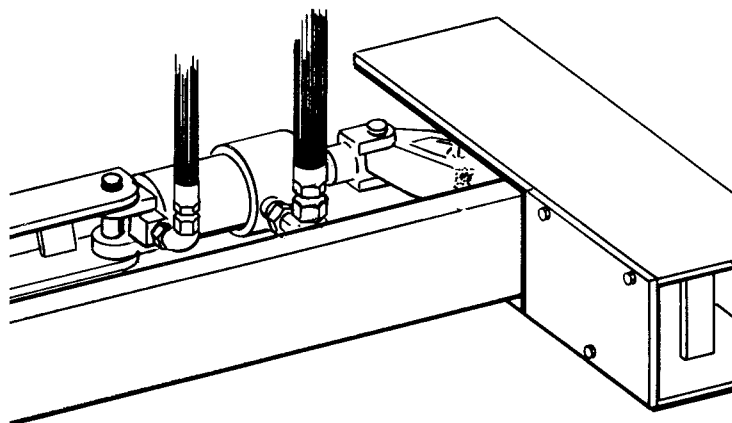
- Again depress the speed-up button and pull the lever outward as if retracting the cylinders. Hold the lever in this position while observing the fluid flow from the open cylinder port. The flow of hydraulic fluid should be no more than 12 fluid ounces per minute. A flow greater than 12 ounces indicates an excessive piston seal leak. Remove and disassemble the cylinder as described later in this section.
- If the cylinder does not leak excessively, reconnect the hydraulic hose to the cylinder.



REMOVAL OF CLAMP CYLINDER

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

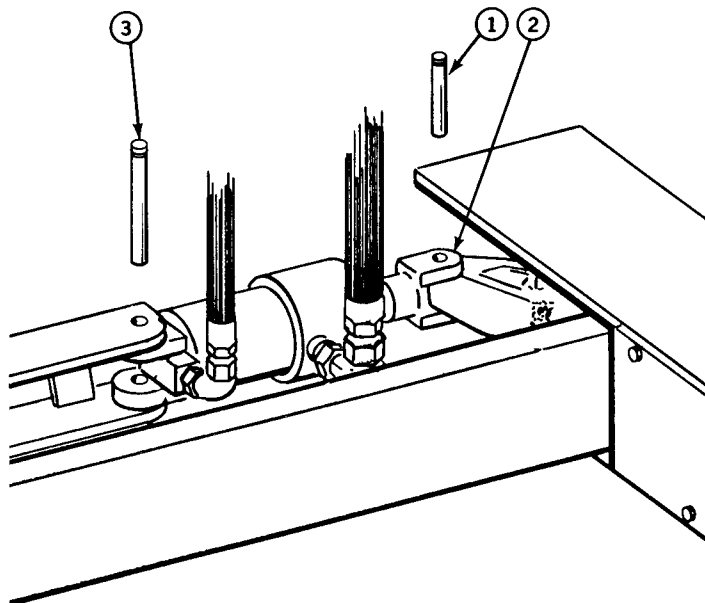
- With the body empty of refuse, fully retract the pushout cylinder to ensure that the clamp is released.



SERVICE AND REPAIR

Operational Status			
Truck	Off	Keys	Removed

2. Remove the capscrew, lockwasher, retainer and pivot pin (1) from the rod clevis (2).
3. Next remove the capscrew, lockwasher, retainer and pivot pin (3) from the cylinder base.
4. The cylinder may now be removed from the clamp area for disassembly of the clamp mechanism.
5. For complete clamp cylinder removal, release the trapped pressure in hoses by pushing and pulling the pushout lever. Then disconnect the hoses from the cylinder.
6. Cap the hoses and plug the cylinder ports.

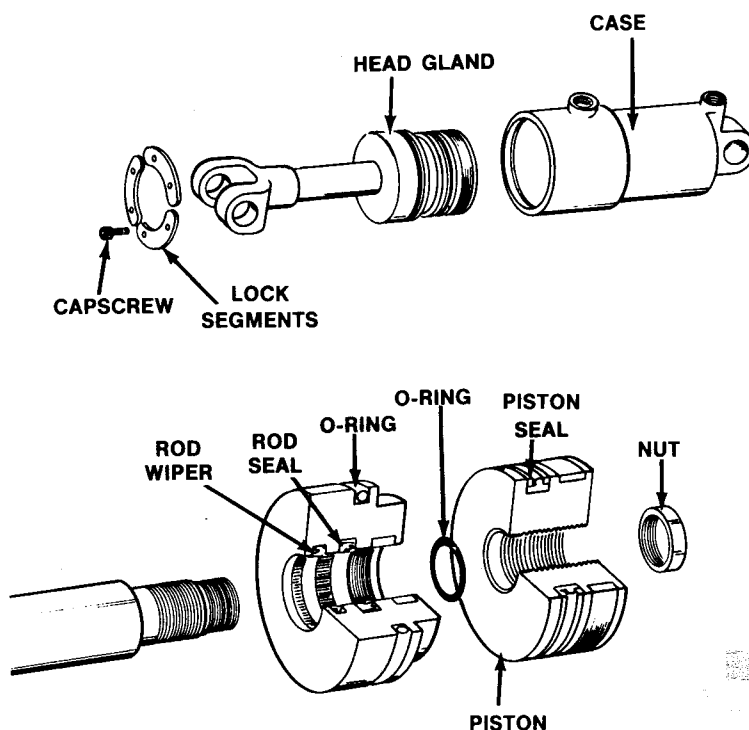


CAUTION

Loosen hydraulic fittings slowly to release pressure.

DISASSEMBLY OF CLAMP CYLINDER

1. Remove grease fittings, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Section 4, General Repair Practices, before proceeding to disassemble the cylinder.
2. Secure the case end of the cylinder to the floor or workbench.
3. Secure the rod end of the cylinder to an overhead lifting device with a minimum lifting capacity of 500 lbs.
4. Remove the six (6) capscrews, lockwashers, and three (3) lock segments.
5. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.
6. Unscrew the locking nut.
7. Unscrew the piston from the rod and remove the head gland.
8. Remove the rod seal, O-ring, second O-ring and U-cup.



INSPECTION AND REPLACEMENT OF CLAMP CYLINDER

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.
2. A new rod wiper, rod seal, O-rings, and piston seals must be installed anytime the cylinder is disassembled. Pay particular attention to the way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION OF CLAMP CYLINDER

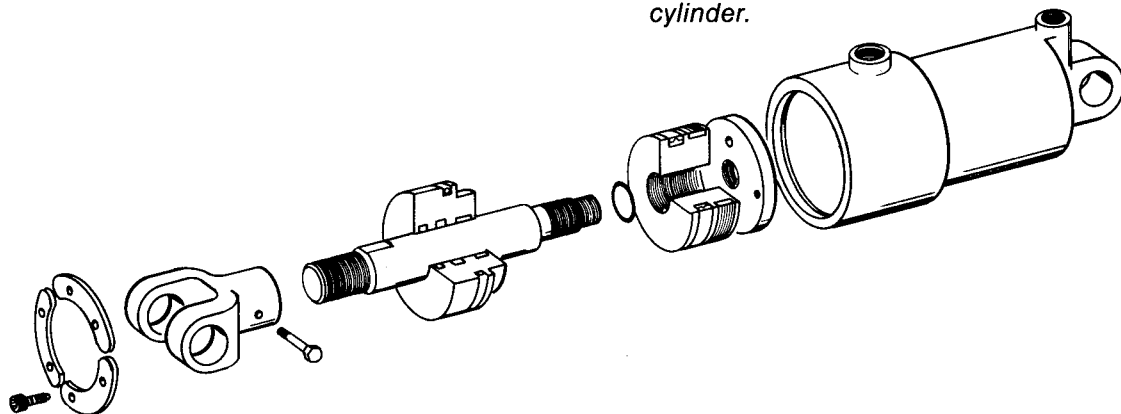
Reassemble and install clamp cylinder in approximate reverse order of disassembly.

NOTE

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.

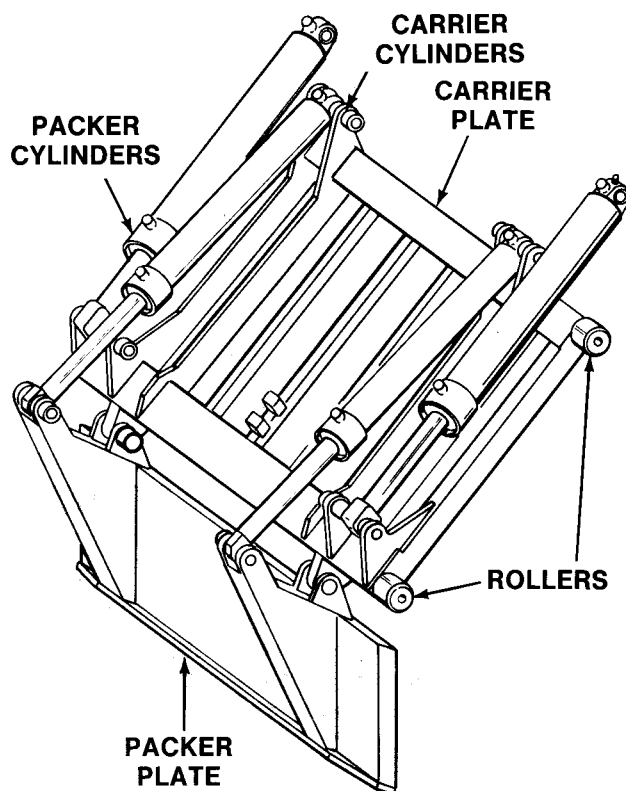
NOTE

Special tools, listed in Section 11, may be necessary to properly reassemble the cylinder.



DESCRIPTION OF CARRIER AND PACKER PLATES

The carrier and packer plates operate as a single unit to sweep refuse from the hopper and pack it against the pushout plate. Their movement through the different cycles is controlled by the operating cylinders. Movement of the plates within the body is kept in alignment by the roller assemblies, located at each corner of the carrier plate. The rollers ride inside a track channel on each side of the tailgate.



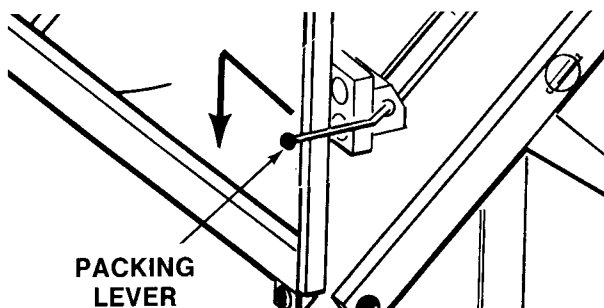
SERVICE AND REPAIR

REMOVAL OF PACKER PLATE

Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
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1. Position the packer plate at the "interrupted cycle" position.
2. Move the operating lever in and down until the packer plate reaches a vertical position. This will take the pressure off the rod eye when the pin is removed.



NOTE

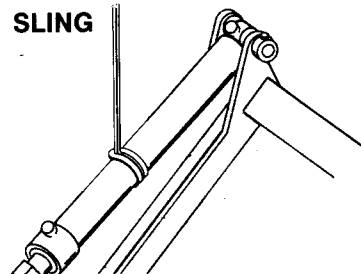
See Sec. 4, GENERAL REPAIR PRACTICES for more detailed information about the correct use of slings and lifting chains.

Operational Status

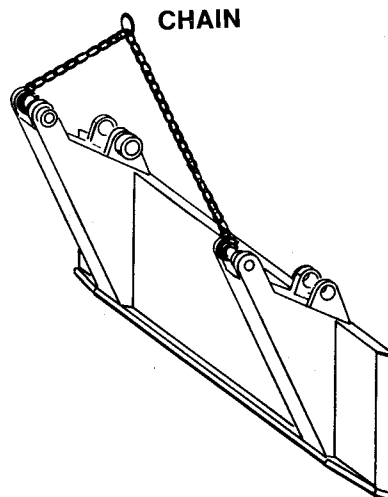
Truck	Off	Keys	Removed
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3. Remove the locknut and capscrew from the rod end of both packer cylinders.
4. Secure a nylon sling around the cylinder and attach to a suitable lifting device with a minimum 500 lb. lifting capacity. Make sure the cylinder weight is securely supported and carefully remove the cylinder rod pin.
5. After both cylinders have been disconnected, attach a chain connected to a suitable lifting device, with a minimum lifting capacity of 1600 lbs., to the packer plate as shown. Operate the lifting device to support the weight of the packer plate **without** causing strain on the bearing or roller assemblies.
6. Remove the roll pins and washers from the packer plate pivot pins.

NYLON SLING



CHAIN



⚠ WARNING

Remain clear of packer plate when removing pivot pins.

7. Remove the pivot pins.
8. With the pivot pins removed carefully operate the hoist and lift the packer plate out of the hopper. Use care to avoid damaging the hopper.

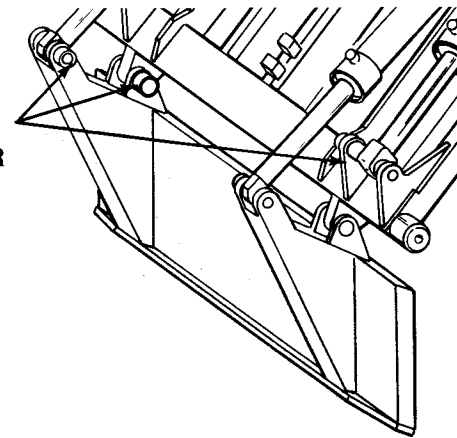
SERVICE AND REPAIR

INSPECTION AND REPLACEMENT OF PACKER PLATE

Operational Status			
Truck	Off	Keys	Removed

1. Carefully inspect all pivot areas for excessive or uneven wear, scoring, or other damage.
2. Check the plate for broken welds, bent edges or warpage.
3. Inspect the edge for damage. Replace a badly worn edge as described below.
4. Replace parts as necessary. (See Sec. 4, GENERAL REPAIR INSTRUCTIONS.)

INSPECT FOR WEAR



REPLACEMENT OF PACKER PLATE EDGE

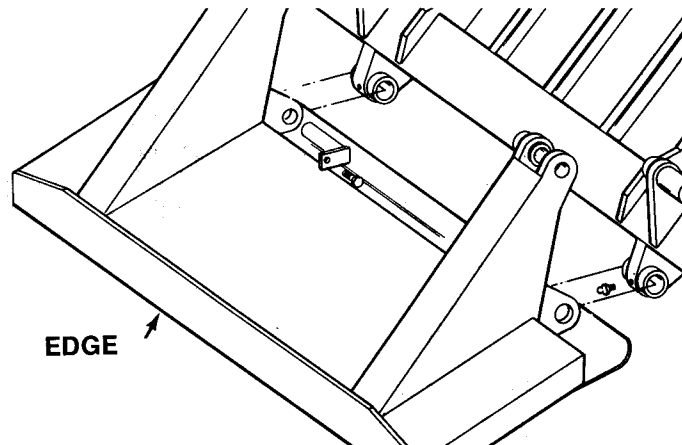
Operational Status			
Truck	Off	Keys	Removed

1. Remove the old edge with an Air Arc to obtain a clean cut.
2. Smooth the edge of the packer plate where the new edge will be attached.
3. Weld a new edge in place.

NOTE

See Sec. 4, GENERAL REPAIR PRACTICES for more information about welding rods.

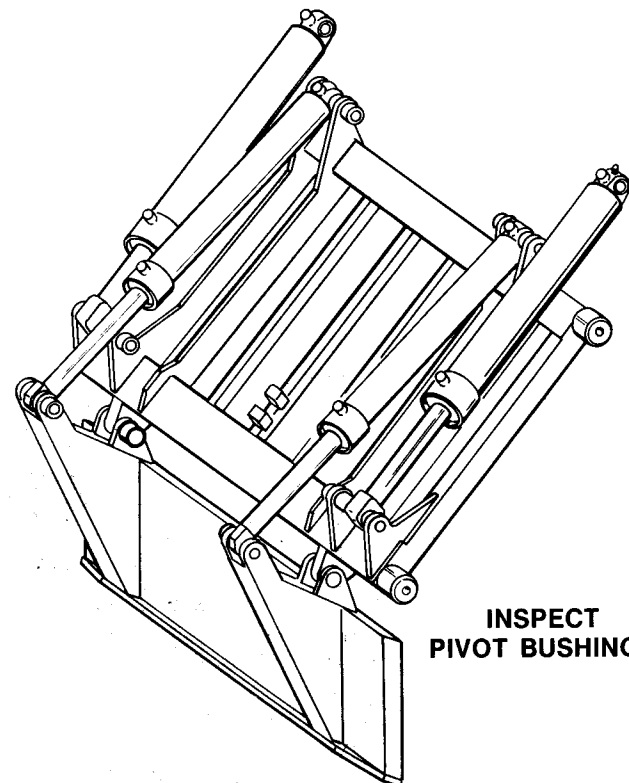
EDGE



INSTALLATION OF PACKER PLATE

Install the packer plate in the approximate reverse order of disassembly. Prior to installation, inspect the pivot bushings in the carrier plate and replace if worn.

INSPECT PIVOT BUSHINGS



SERVICE AND REPAIR

REMOVAL OF CARRIER PLATE

NOTE

Remove the packer plate and four operating cylinders as described earlier in this section.

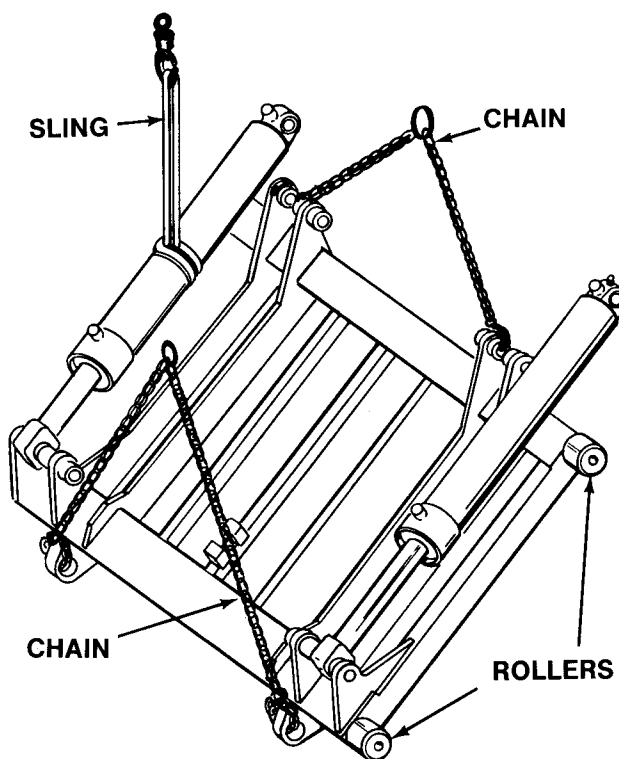
Operational Status			
Truck	Off	Keys	Removed

1. Attach a chain, connected to a suitable lifting device with a minimum lifting capacity of 1600 lbs. to the upper and lower end of the carrier plate, as shown.
2. Remove the rollers as described later in this section.
3. Lower the carrier plate into the tailgate hopper and disconnect the chains.

NOTE

See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

4. Remove the tailgate as described earlier in this section. Once the tailgate is removed, the carrier plate can be supported or removed as necessary for repair.



TRACK BAR REPLACEMENT

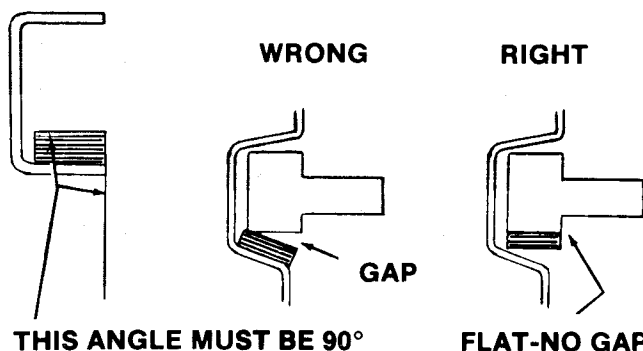
Refer to Sec. 4, GENERAL REPAIR INSTRUCTION for welding instructions.

1. Remove the old track bar and make sure the track channel is smooth and clean.

CAUTION

The Leach track bar is made out of special alloy bar steel. Do not substitute a different steel. It may cause damage to the tailgate.

2. Weld the new track bar into place. The surface of the track bar must be at 90° from the side of the tailgate so the roller will run true.



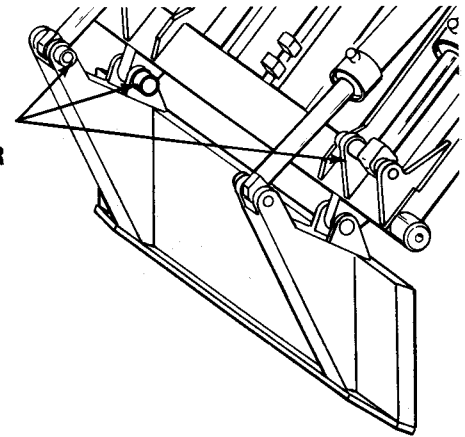
SERVICE AND REPAIR

INSPECTION AND REPLACEMENT OF PACKER PLATE

Operational Status			
Truck	Off	Keys	Removed

1. Carefully inspect all pivot areas for excessive or uneven wear, scoring, or other damage.
2. Check the plate for broken welds, bent edges or warpage.
3. Inspect the edge for damage. Replace a badly worn edge as described below.
4. Replace parts as necessary. (See Sec. 4, GENERAL REPAIR INSTRUCTIONS.)

INSPECT FOR WEAR



REPLACEMENT OF PACKER PLATE EDGE

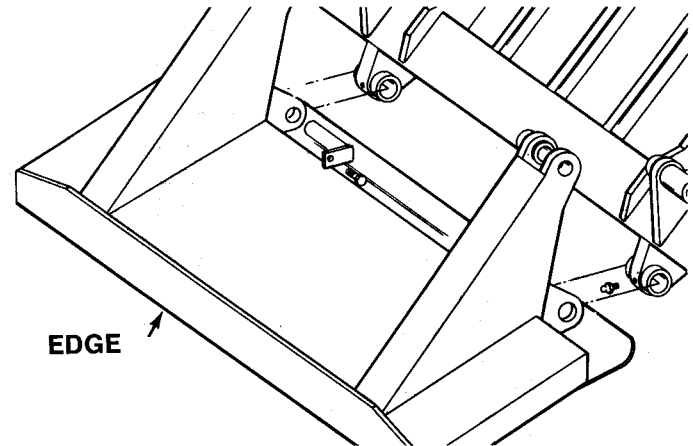
Operational Status			
Truck	Off	Keys	Removed

1. Remove the old edge with an Air Arc to obtain a clean cut.
2. Smooth the edge of the packer plate where the new edge will be attached.
3. Weld a new edge in place.

NOTE

See Sec. 4, GENERAL REPAIR PRACTICES for more information about welding rods.

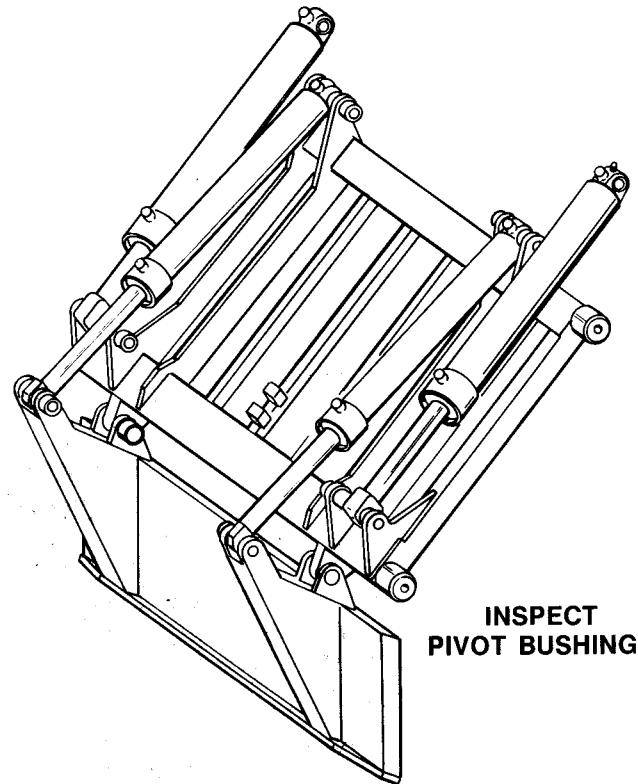
EDGE



INSTALLATION OF PACKER PLATE

Install the packer plate in the approximate reverse order of disassembly. Prior to installation, inspect the pivot bushings in the carrier plate and replace if worn.

INSPECT PIVOT BUSHINGS



REMOVAL OF CARRIER PLATE

NOTE

Remove the packer plate and four operating cylinders as described earlier in this section.

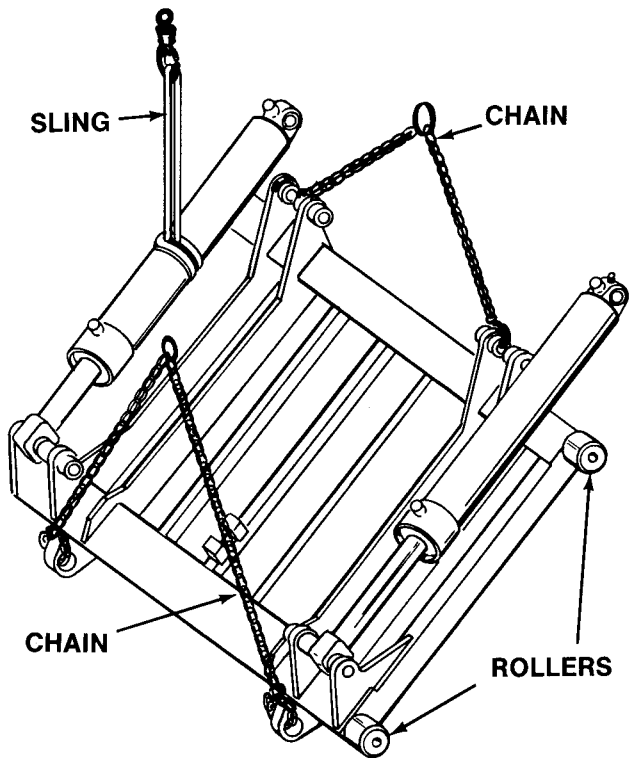
Operational Status			
Truck	Off	Keys	Removed

1. Attach a chain, connected to a suitable lifting device with a minimum lifting capacity of 1600 lbs. to the upper and lower end of the carrier plate, as shown.
2. Remove the rollers as described later in this section.
3. Lower the carrier plate into the tailgate hopper and disconnect the chains.

NOTE

See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

4. Remove the tailgate as described earlier in this section. Once the tailgate is removed, the carrier plate can be supported or removed as necessary for repair.



TRACK BAR REPLACEMENT

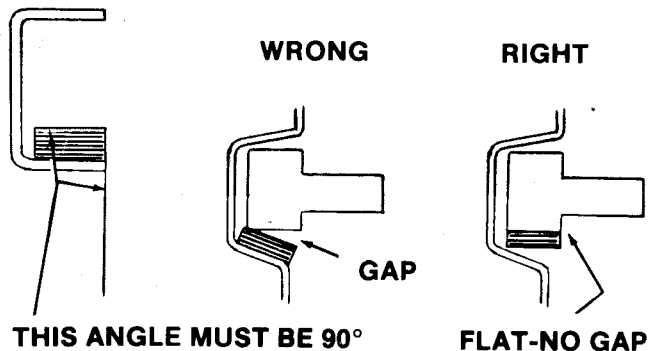
Refer to Sec. 4, GENERAL REPAIR INSTRUCTION for welding instructions.

1. Remove the old track bar and make sure the track channel is smooth and clean.

CAUTION

The Leach track bar is made out of special alloy bar steel. Do not substitute a different steel. It may cause damage to the tailgate.

2. Weld the new track bar into place. The surface of the track bar must be at 90° from the side of the tailgate so the roller will run true.



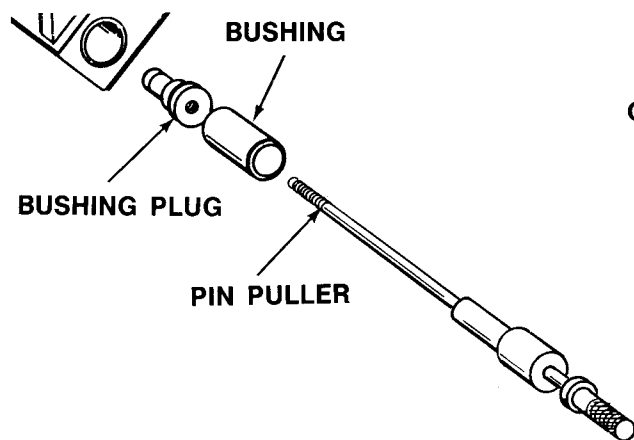
INSPECTION AND REPLACEMENT OF CARRIER PLATE

Operational Status

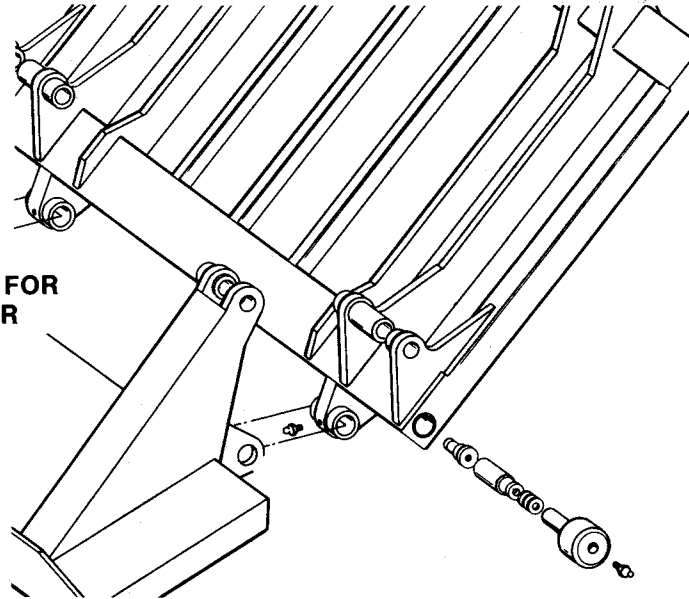
Truck	Off	Keys	Removed

1. Carefully inspect all pivot, bearing and roller surfaces for excessive or uneven wear, scoring or damage.
2. Check the plate for broken welds, bent edges or warpage.

3. Inspect the tailgate channel track bars for excessive wear or damage.
4. Replace parts as necessary.
5. The roller shaft bushings may be removed using a pin puller (See Sec. 11, SERVICE TOOLS) which screws in the bushing plug.

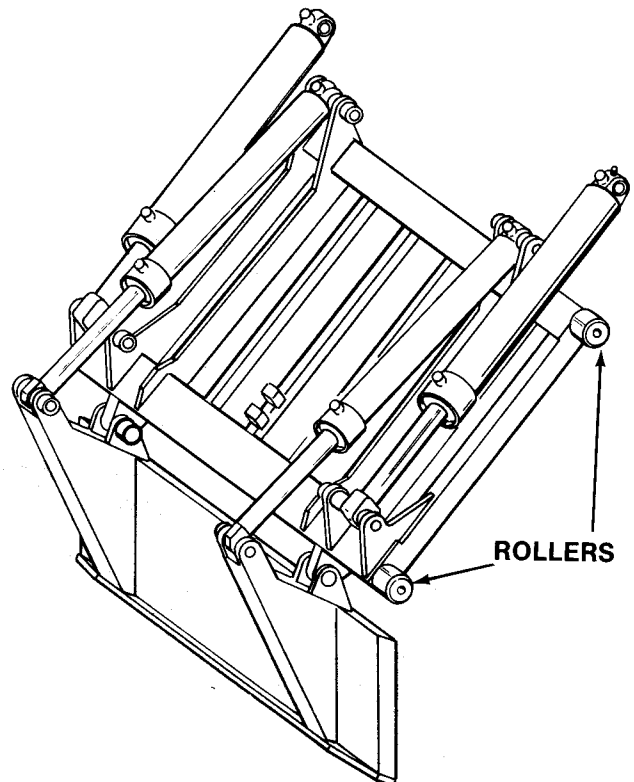


CHECK FOR WEAR



INSTALLATION OF CARRIER PLATE

Install the carrier plate in the approximate reverse order of disassembly. Pay particular attention to the installation of the roller and bearing assemblies as described earlier in this section.

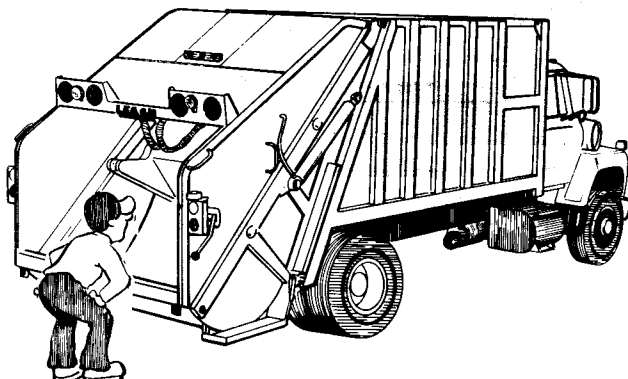


SERVICE AND REPAIR

ROLLER REPLACEMENT/SHIMMING

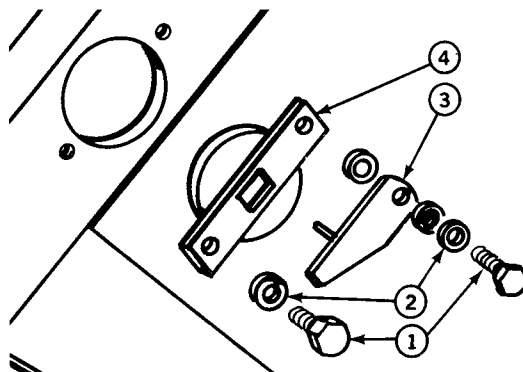
Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

1. Shift the packing lever and cycle the unit several times while observing the rollers and action of the packer and carrier plates. Watch for side-ways movement or twisting to determine where shimming and/or new rollers may be needed.



Operational Status			
Truck	Off	Keys	Removed

2. Remove the capscrews (1), lockwashers (2), cover (3) and cover weldment (4) for the track hole of the roller or rollers to be removed.



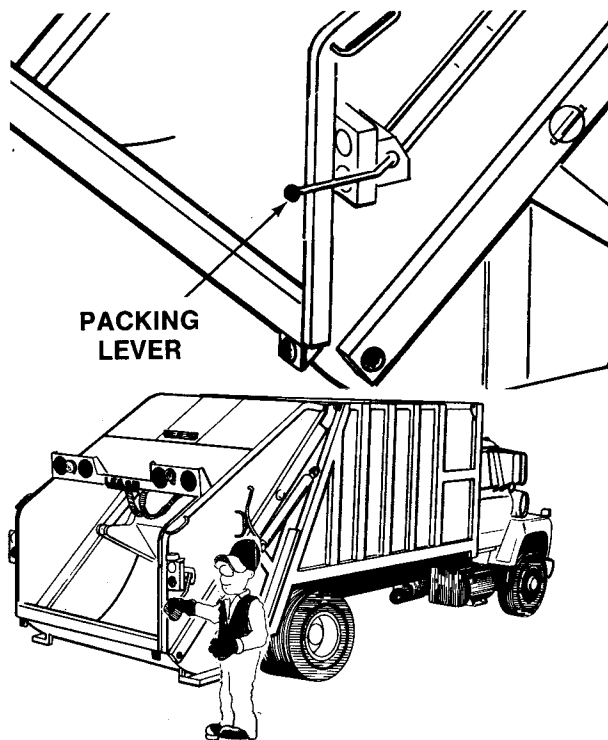
Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. OFF

3. Shift the packing lever and cycle the plates as necessary to align the upper and lower roller assemblies with the track holes.

NOTES

If the top roller is removed, First place a wedge between the carrier plate and the partition sheet to take the weight off of the roller assemblies.

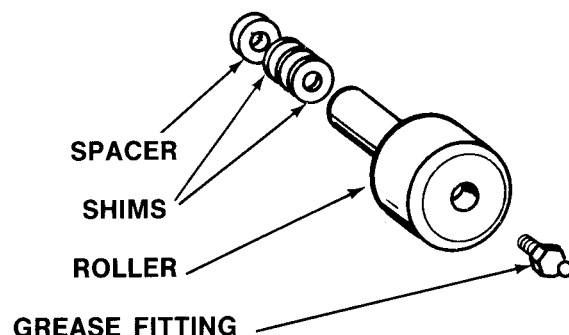
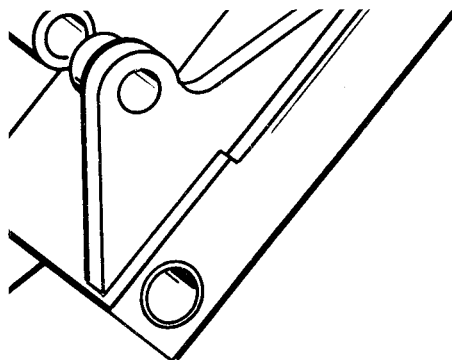
If the bottom roller is removed, support the carrier and packer plate assembly before removing the roller.



SERVICE AND REPAIR

Operational Status			
Truck	Off	Keys	Removed

4. Remove one roller and shaft assembly at a time.
5. Replace any roller that is excessively worn, cracked or out of round. Inspect the condition of the track bar. Replace if necessary.
6. Install a grease fitting in roller and the original shims or the same amount of new shims as removed.

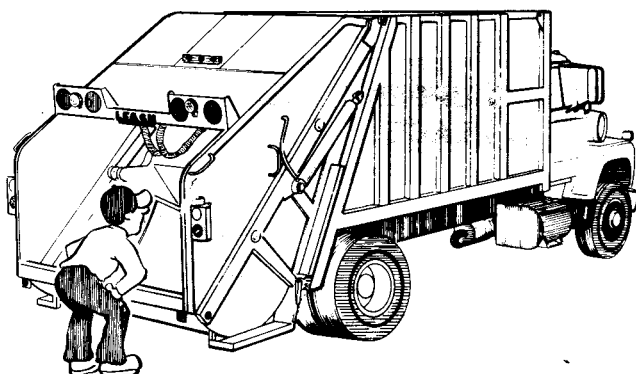


Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

7. Repeat step 1 to determine if additional shims are required.

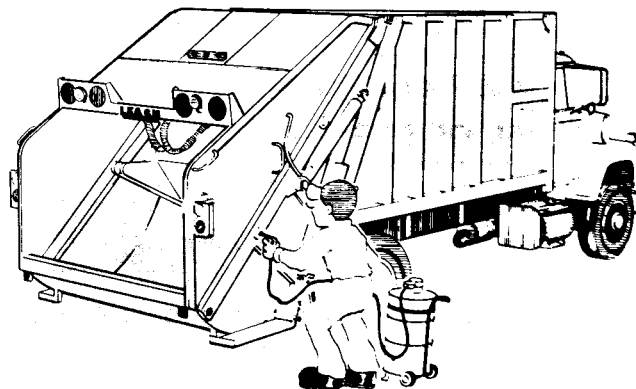
CAUTION

Do not over shim rollers. Excessive shimming may damage tailgate walls or wear the track channels.



Operational Status			
Truck	Off	Keys	Removed

8. Remove the appropriate rollers and adjust the shims as required to obtain a smooth operating carrier plate. (This may require adding or removing shims and operating the packing lever several times until the correct alignment is achieved.)
9. Reinstall the track hole covers in the reverse order of removal.
10. Once the alignment is correct, lubricate each roller as described in the LUBRICATION CHART, Sec. 6, PREVENTIVE MAINTENANCE.



SERVICE AND REPAIR

DESCRIPTION OF PUSHOUT PLATE

The pushout plate is connected to, and controlled by, the pushout bar and pushout cylinder. Refuse is packed against the pushout plate during loading. During unloading the pushout plate is clamped to the pushout bar which ejects the load as the pushout cylinder is extended.

The pushout plate will not travel the entire length of the body on one stroke of the cylinder so, at the end of the extension stroke the clamp is released and the cylinder retracted. Then the clamp is set again and the plate can be moved rearward one more cylinder stroke. This sequence is repeated as many times as necessary to completely unload the body.

During its movement through the body the pushout plate rides in a trough. Its sideways movement is minimized by eight replaceable plastic and fiber blocks one of which is adjustable and called the friction brake. The front outside edges of the pushout plate are equipped with pushout shoes.

INSPECTION AND REPLACEMENT OF WEAR BLOCKS AND PUSHOUT SHOES—PLATE REMOVED

Operational Status			
Truck	Off	Keys	Removed

1. Inspect the wear blocks and pushout shoes for wear. Replace worn parts.

SHIMMING UPPER WEAR BLOCKS WITH PLATE IN PLACE

Shims can be added to the upper wear blocks in the front without removing the pushout plate, as follows:

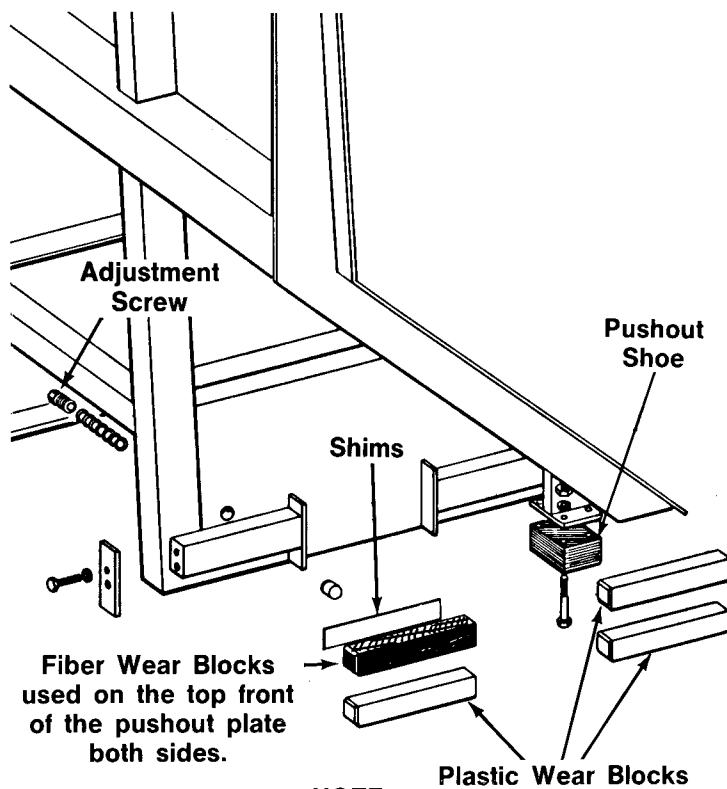
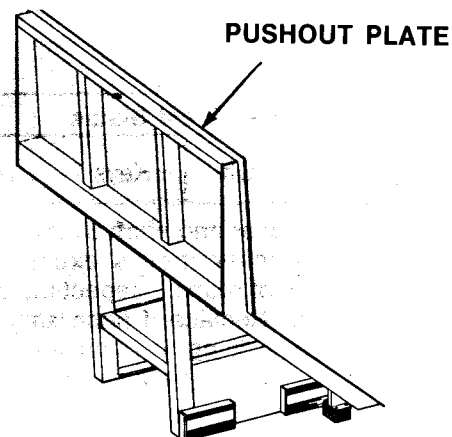
Operational Status			
Truck	Off	Keys	Removed

1. Loosen the friction brake adjusting screw.
2. Pry the plate at forward (nearest cab) end to one side.
3. Add shims behind the wear block.
4. Repeat the procedure for the other side.
5. Tighten the friction brake adjusting bolt until the plate does not move when stopping or starting.

REMOVAL OF PUSHOUT PLATE

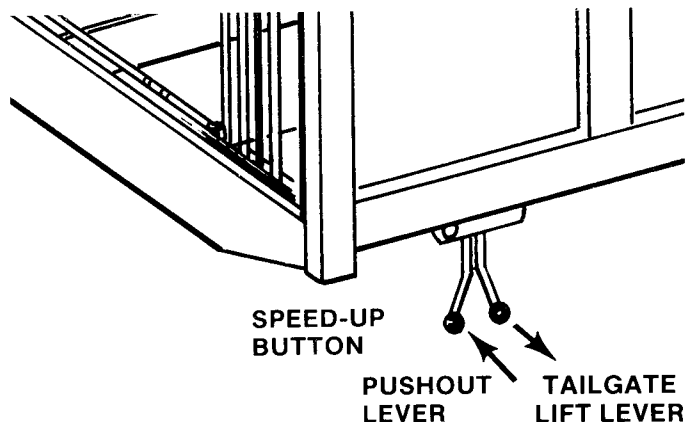
Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

1. Move the pushout lever and position the pushout plate at the extreme rear of the body.
2. Pull the tailgate lift lever to raise the tailgate.



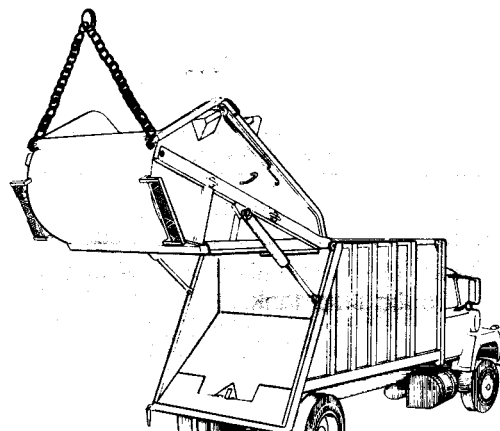
NOTE

All wear blocks are plastic with telescopic pushout option since no friction brake is required.



Operational Status			
Truck	Off	Keys	Removed

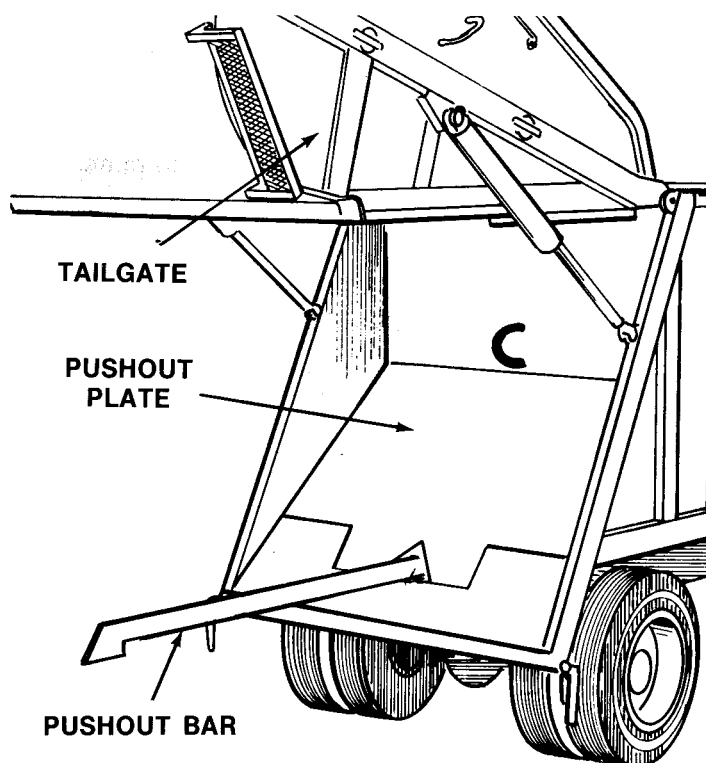
- Support the tailgate from an overhead hoist or crane with a minimum lifting capacity of 7500 lbs.



CAUTION

Loosen the hydraulic fittings slowly to release the pressure.

- Disconnect the pushout bar as explained in removal of the pushout cylinder.
- Remove the pushout bar by pulling it through the pushout plate and out from under the raised tailgate.
- Remove the friction brake adjusting bolt.
- Disconnect the hydraulic fluid lines to the clamp cylinder. Cap and the plug hoses and cylinder ports.
- Weld an eye to the center of the plate and attach a chain to prevent the plate from tipping over upon removal.
- The pushout plate can now be removed from the body. The method of removal will depend on the equipment available. Whatever method is used, the equipment must be capable of lifting a minimum of 2800 lbs. and the plate should be secured safely to the removal device.

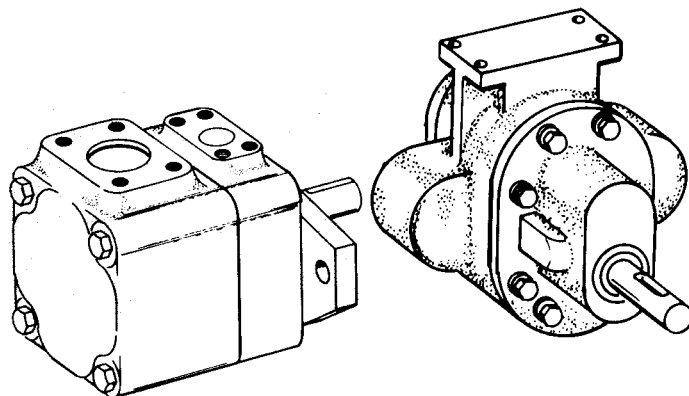


INSTALLATION OF PUSHOUT PLATE

Install the pushout plate in the reverse order of removal.

DESCRIPTION OF HYDRAULIC PUMP

The pump which serves the complete hydraulic system is usually coupled to a shaft through a yoke arrangement. It may be mounted under the body and connected to a power take off (PTO) on the transmission or it may be mounted on the front of the unit and attached directly to the front of the engine.

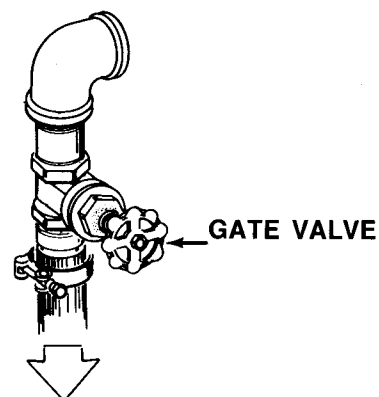


SERVICE AND REPAIR

REMOVAL OF HYDRAULIC PUMP

Operational Status			
Truck	Off	Keys	Removed

1. Close the gate valve on the underside of the hydraulic fluid tank.

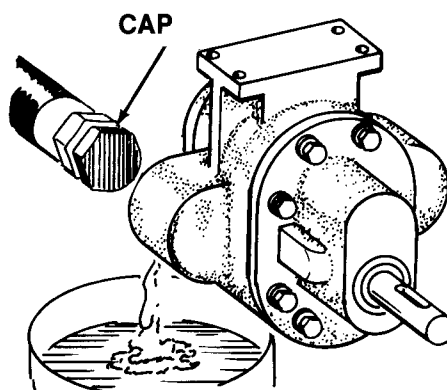


2. Remove the hose clamp.
3. Remove the pump suction line and allow the fluid to drain.

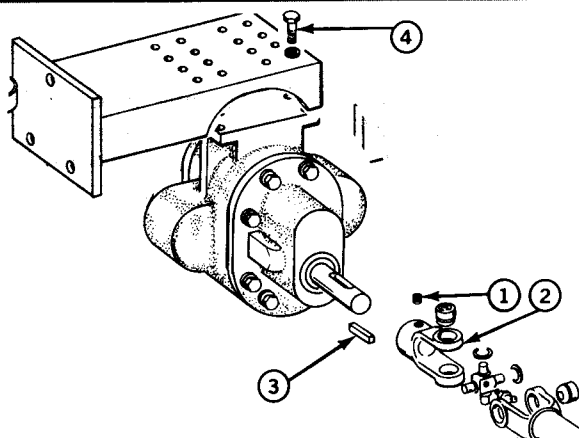
NOTE

The pump suction line (tube and hose) will also be filled with hydraulic fluid.

4. Disconnect the high pressure hose at the pump and cap the end.



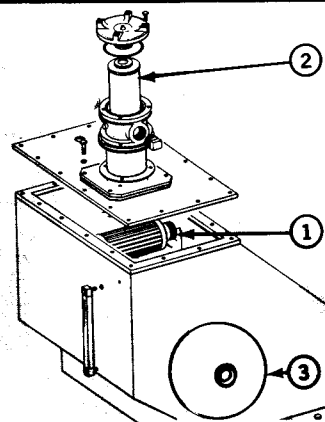
5. Loosen the setscrew (1) and free the yoke (2) from the pump shaft by telescoping the PTO drive shaft toward the PTO.
6. Remove the key (3) from the pump shaft keyway.
7. Remove the hardware (4) and pump assembly from the mounting bracket.



NEW PUMP PREPARATION

Before installing a new pump, refer to Sec. 6, PREVENTIVE MAINTENANCE and the following. This will prevent contamination of the new pump.

1. Remove and clean the hydraulic tank strainer. (1)
2. Change the filter element. (2)
3. Clean the magnetic disc. (3)



SERVICE AND REPAIR

▲WARNING

Be sure to wear eye protection.

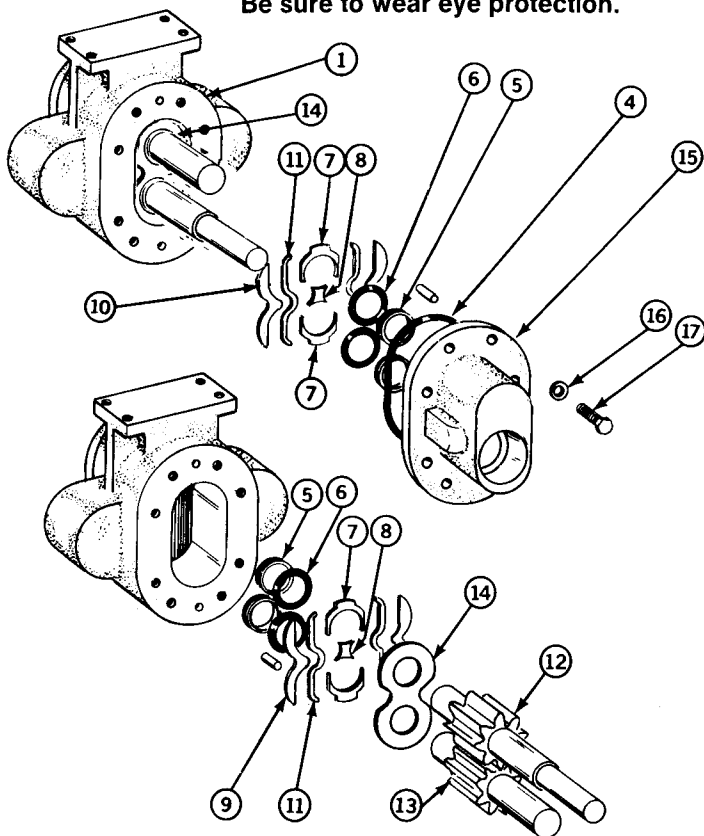
**DISASSEMBLY OF 203834
HYDRAULIC PUMP**

1. After removal, thoroughly clean the outside with solvent and a brush. Then blow dry the pump with compressed air. Scribe flange cover (15) and body (1) so they can be matched for reassembly.
2. Carefully place the pump body in a vise and remove capscrews (17) and washers (16).
3. Lift flange cover (15) off pump body and remove the o-ring (4) from the flange.
4. Remove o-ring (6) and back-up ring (5) from each gear shaft.
5. Remove the top isolation plates (10), sealing strips (11), end separators (7) and center separator (8).
6. Remove the drive gear (12), top pressure plate (14) and idler gear (13).
7. Remove the bottom pressure plate (14) by using an expandable bearing puller and lifting straight up out of the body.

NOTE

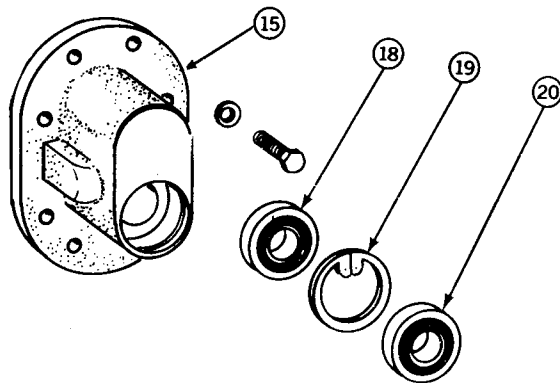
It may be necessary to use a sharp knife to remove the rolled up lapped edge that adjoins the pressure plate. Do not force or bend the pressure plate.

8. Remove the bottom isolation plates (9), sealing strips (11), end separators (7), center separator (8), back-up rings (5) and o-rings (6).
9. Clean all the internal parts with solvent and blow dry.
10. Inspect all parts carefully.

**REPLACING HYDRAULIC PUMP SHAFT
SEALS ON 203834 HYDRAULIC PUMP**

After removing and cleaning the pump.

1. Remove the flange cover (15) from pump as described in steps 1-4 of the "disassembly instructions".
2. First drive out the old wiper (20).
3. Remove the snap ring (19) and then the seal (18).
4. Clean the flange cover (15) in solvent and blow dry.
5. Press in a new seal (18).
6. Install snap ring (19) and a new wiper (20).
7. Install the flange cover (15) as described in steps 12-16 of the "reassembly instructions".



SERVICE AND REPAIR

REASSEMBLY OF 203834 HYDRAULIC PUMP

1. Place the body (1) so the scribed mark faces you.
2. For easier assembly, use clean hydraulic fluid as a lubricant.
3. Install o-rings (6) and back-up rings (5) on the protruding ends of the bearings at the bottom of the body.
4. Examine the four isolation plates. Note that one pair is slightly different from the other pair. Choose the two that have the rounded outer edges (9) and install them in their proper location at the bottom of the body bore with the rounded edges facing down.
5. Install end separators (7), center separator (8), and sealing strips (11).
6. With the bronze side facing up, lower the bottom pressure plate (14) into place in the bottom of the body bore. Do not force.
7. Install drive gear (12) by lowering carefully.
8. Install idler gear (13).
9. Install the top pressure plate (14) with the bronze side facing down.
10. Install end separators (7), center separator (8), sealing strips (11), and isolation plates (10).
11. Examine the flange cover shaft seal (18) and wiper (20). If replacement is necessary see "seal replacement instructions" immediately following this section.
12. Install o-rings (6) and back-up rings (5) on the extended portion of the bearings inside the flange (15) plate.
13. Install o-ring (4) into the groove in the flange cover (15). Use heavy grease to hold the o-ring in place.

NOTE

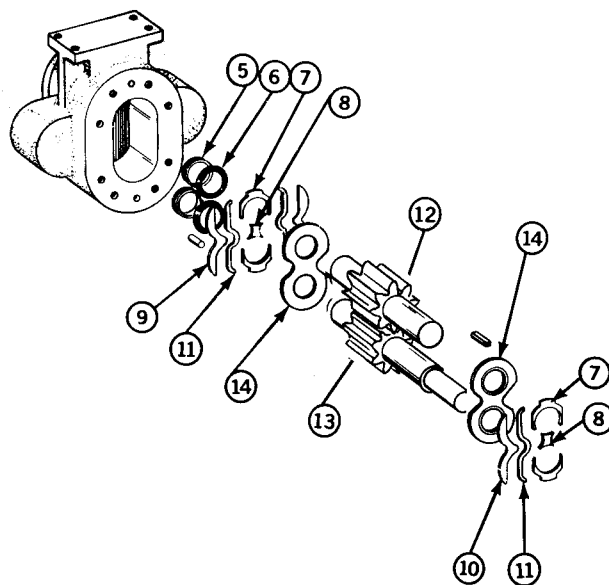
Coat the drive gear shaft extension with clean, heavy grease to protect the seal lip as the seal slides over the shaft.

14. Slide the flange cover (15) down on the drive gear (12) until it touches the dowels (2) in the body (1).

NOTE

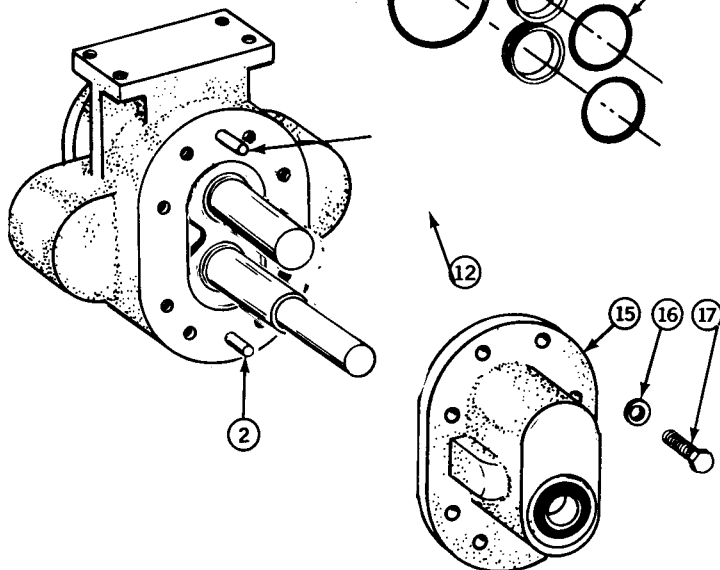
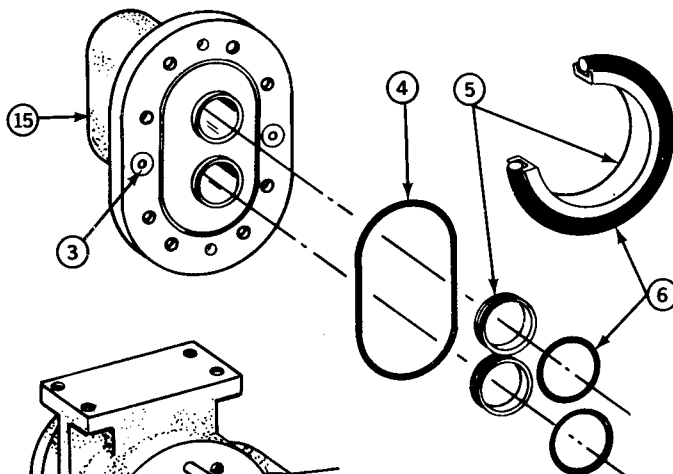
Use extreme care when seating the flange cover against the body. If not pressed down carefully, the extended portion of the flange cover bearings can pinch the sealing strips.

15. Insert washers (16) and capscrews (17) into the holes in the flange cover (15). Tighten opposite end evenly to 80 foot pounds of torque.
16. Test the pump by using an adjustable wrench with a key installed in the drive gear. When attempting to turn the shaft it should feel tight with a maximum of 5 to 10 foot pounds of torque. If the shaft does not turn properly disassemble, correct the problem, and carefully reassemble.



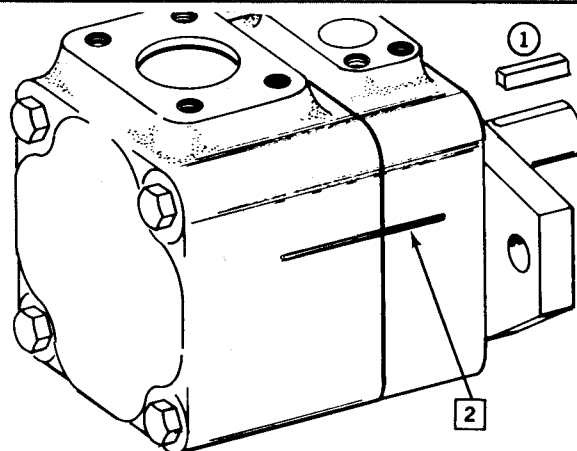
NOTE

The check valves (3) located in the flange cover (15) are not replaceable. They are only available as part of flange cover (15).



DISASSEMBLY OF VANE PUMP

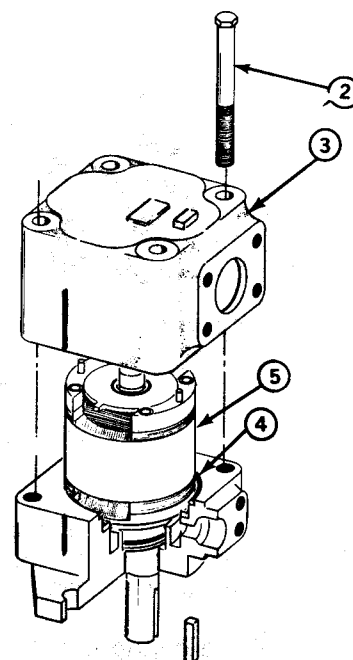
1. Wash the outside of the pump with solvent to prevent dirt from entering the pump components during disassembly.
2. Prior to disassembly, remove the shaft key (1) and scribe a reference mark on the body and cover.



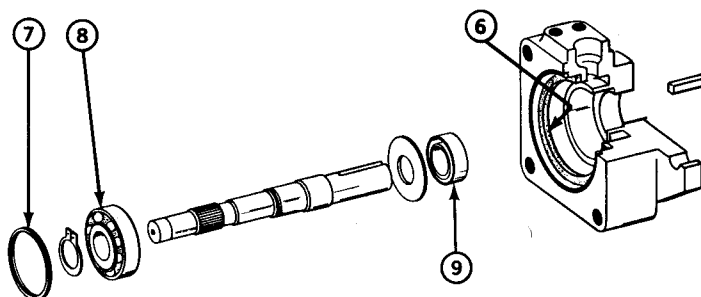
3. Remove the four capscrews (2) and lift the cover (3) from the pump.
4. Remove o-ring (4) and pull the cartridge (5) from the pump.

NOTE

The pump cartridge is supplied as an assembly. Internal parts are not provided separately.



5. Remove seal (6), spirolox ring (7) and pull the shaft and bearing (8) from the body.
6. Remove the shaft seal (9).



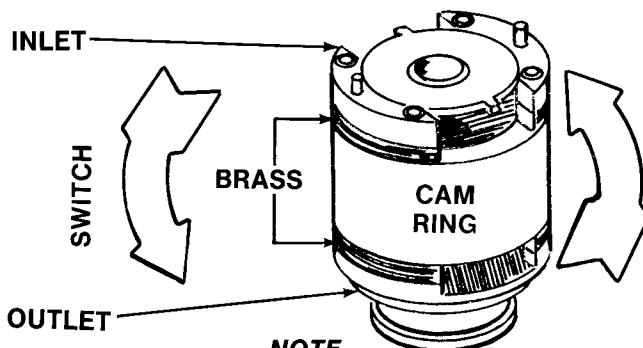
SERVICE AND REPAIR

CHANGE DIRECTION OF ROTATION

NOTE

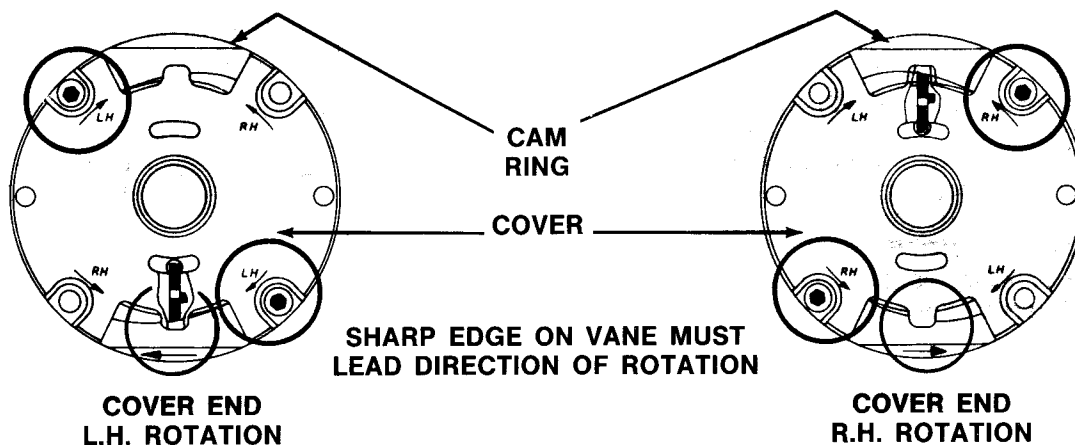
The direction of pump rotation is as viewed from the shaft end; right hand rotation is clockwise; left hand, counterclockwise.

To change the direction of rotation, the cartridge must be disassembled and the inlet and outlet support plates reversed. The direction of pump rotation can be verified by checking the location of the leading edge of the vane and the location of the two socket head screws.



NOTE

The arrows located next to the socket head screws on the cover and on the cam ring, indicate the cartridge direction of rotation.



ALIGNING CARTRIDGE COMPONENTS

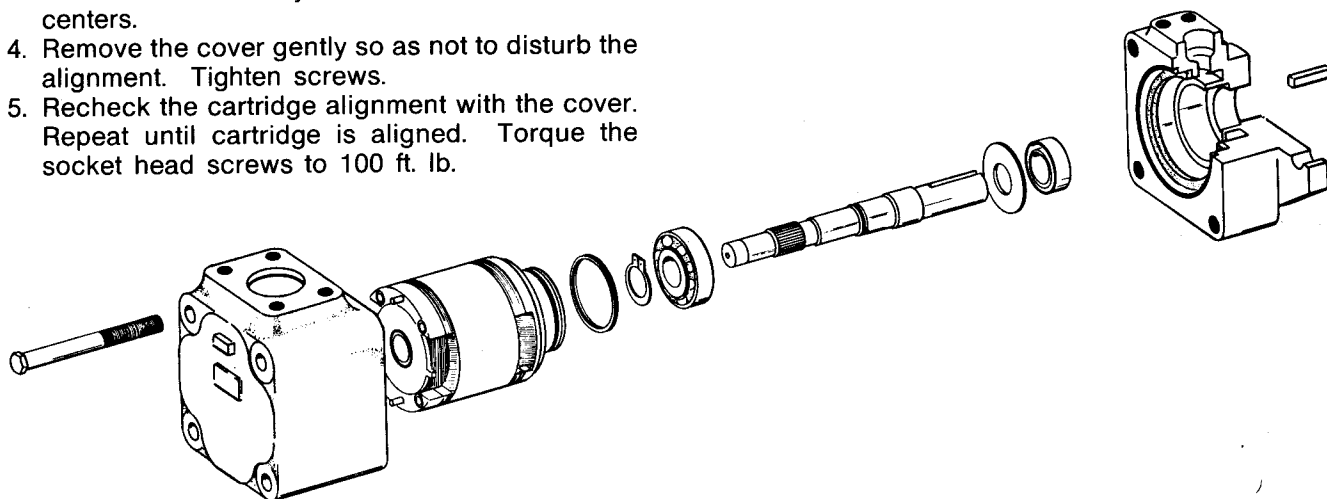
NOTE

The O.D. of all component parts of the cartridge kit must be in line with each other or the cover cannot be installed.

1. Place the assembled cartridge onto the shaft in the pump housing.
2. Loosen the socket head screws.
3. Install the cover over the cartridge. Tap lightly on the cover with your hand until each part centers.
4. Remove the cover gently so as not to disturb the alignment. Tighten screws.
5. Recheck the cartridge alignment with the cover. Repeat until cartridge is aligned. Torque the socket head screws to 100 ft. lb.

REASSEMBLY OF VANE PUMP

Reassemble the pump in the approximate reverse order of disassembly.



INSTALLATION OF HYDRAULIC PUMP

Operational Status			
Truck	Off	Keys	Removed

1. Install the pump in the reverse order of removal. **MAKE SURE** suction and pressure lines are installed correctly for pump rotation. Tighten all mounting hardware and hose clamps.
2. Be sure to re-install any shaft guards that may have been removed.

TESTING A NEW PUMP

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

After installing a new pump, check for correct cycle time and main relief pressure as described in Sec. 7, CHECK-OUT.

DESCRIPTION OF ELECTRICAL SYSTEM

The packer electrical system includes all of the body running and marker lights, operational speed up switches, the operator ready and back-up warning buzzers, and all interconnected wiring, as shown on the accompanying wiring diagram.

TESTING

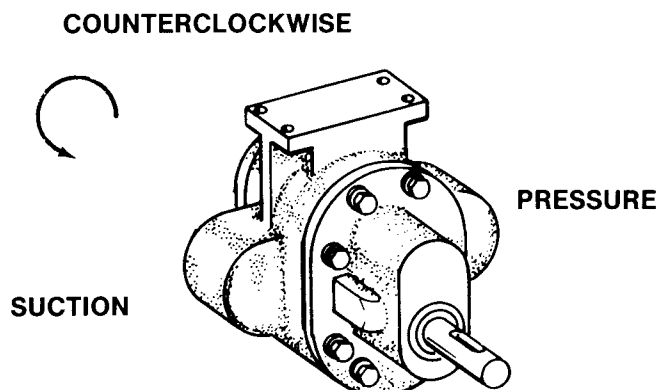
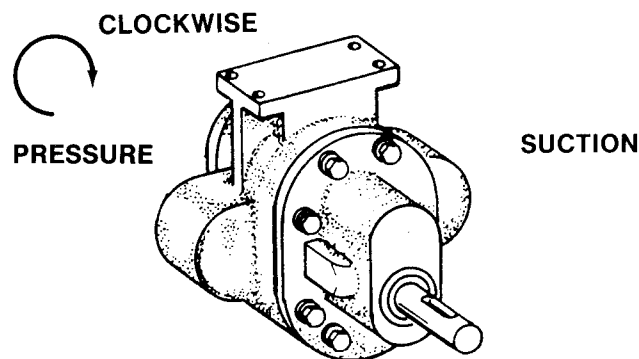
To locate a defective component or break in the wiring perform a continuity check across and between suspected components as described in Sec. 4, GENERAL REPAIR.

GROUNDING THE ELECTRICAL SYSTEM

To insure a proper ground for the electrical system, make sure the internal lockwasher is installed in the following areas:

1. Buzzer System — between pushbutton and bracket.
2. Speed Up System — between pushbutton and bracket.
3. Back Up Alarm — between backup alarm and bracket.
4. Taillight — between light and bracket.

This internal lockwasher will bite into the metal and insure a positive ground.



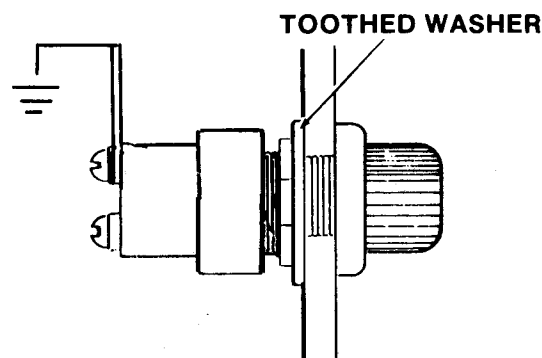
REPAIR

Repair of the electrical system is limited to the replacement of burned out light bulbs and other defective parts of wiring.

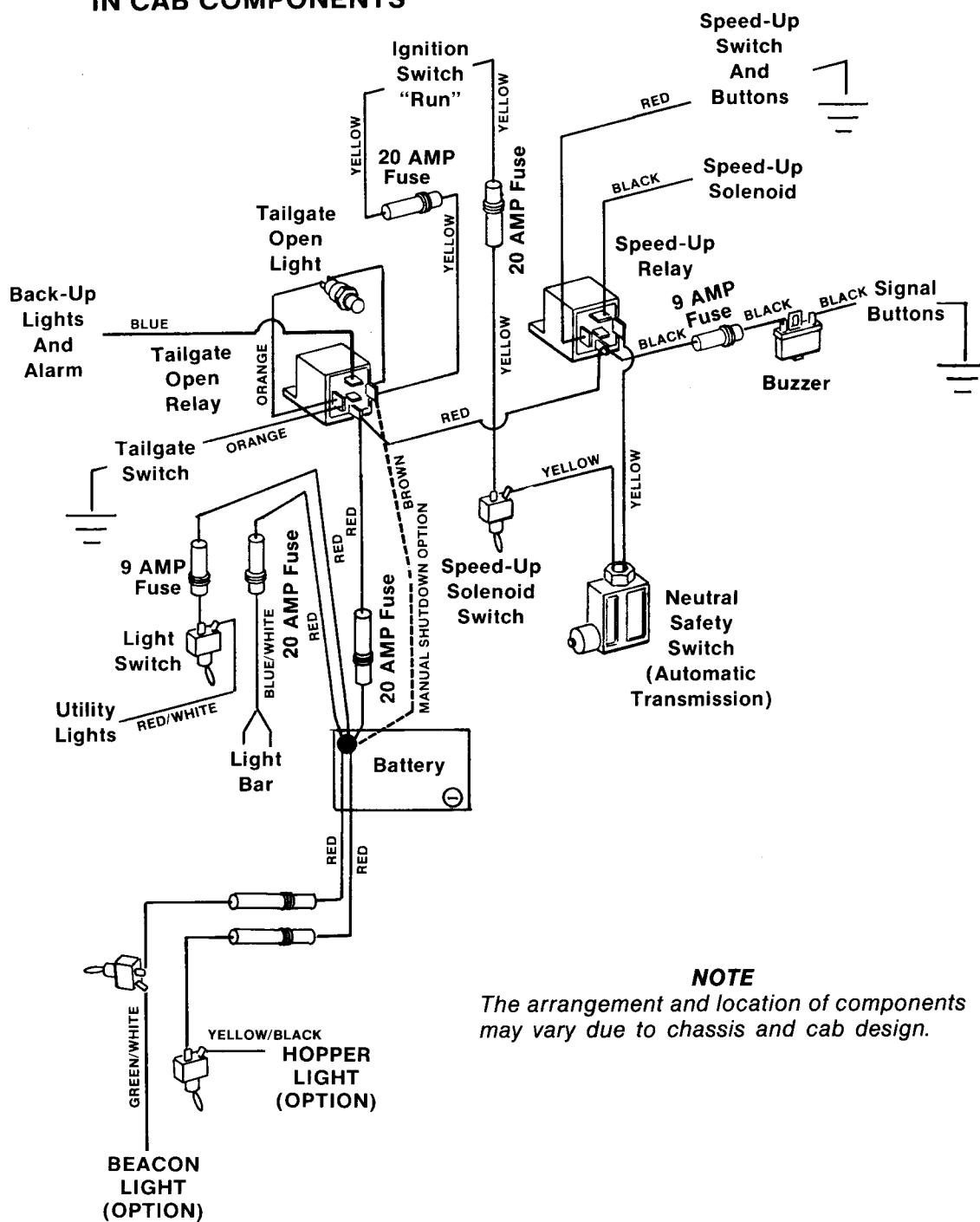
INSPECTION

1. Operate all light switches and pushbutton controls to insure that they are operating normally.
2. Check all wiring for breaks, frayed or worn insulation and loose terminal connections.

TYPICAL EXAMPLE



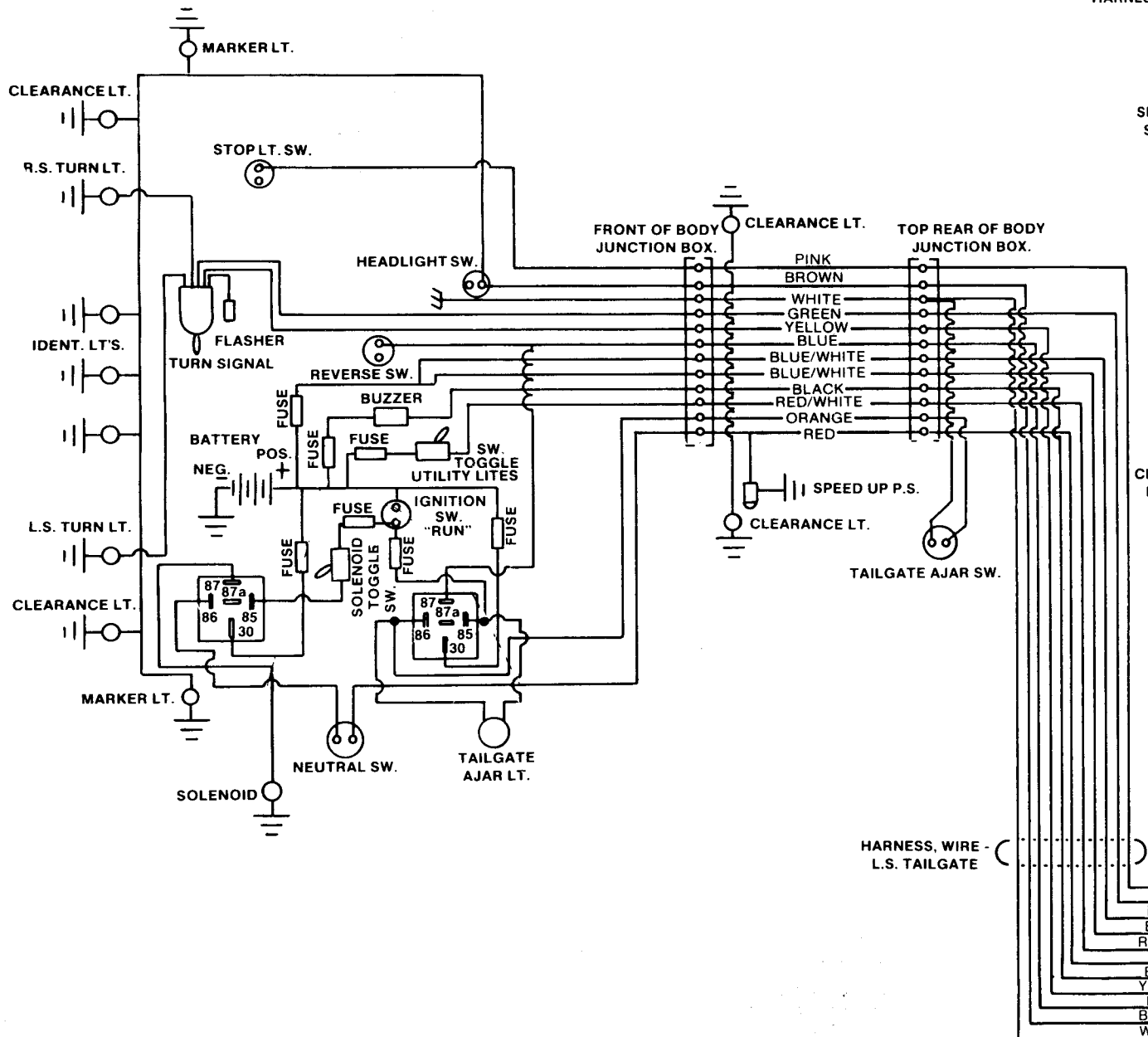
IN CAB COMPONENTS

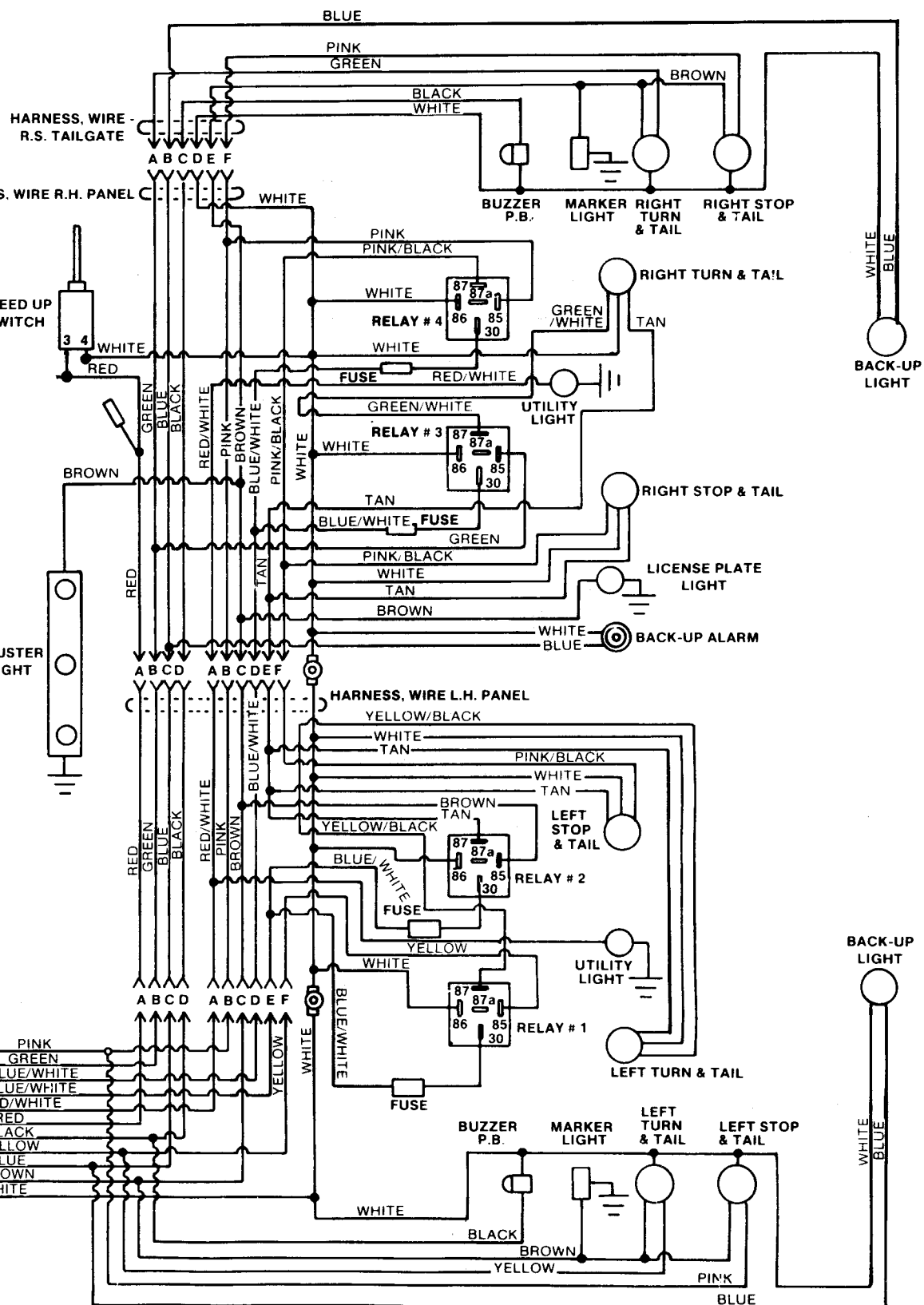


ELECTRICAL SCHEMATIC

BEFORE SERIAL NO. AL1599 (CLAMP)

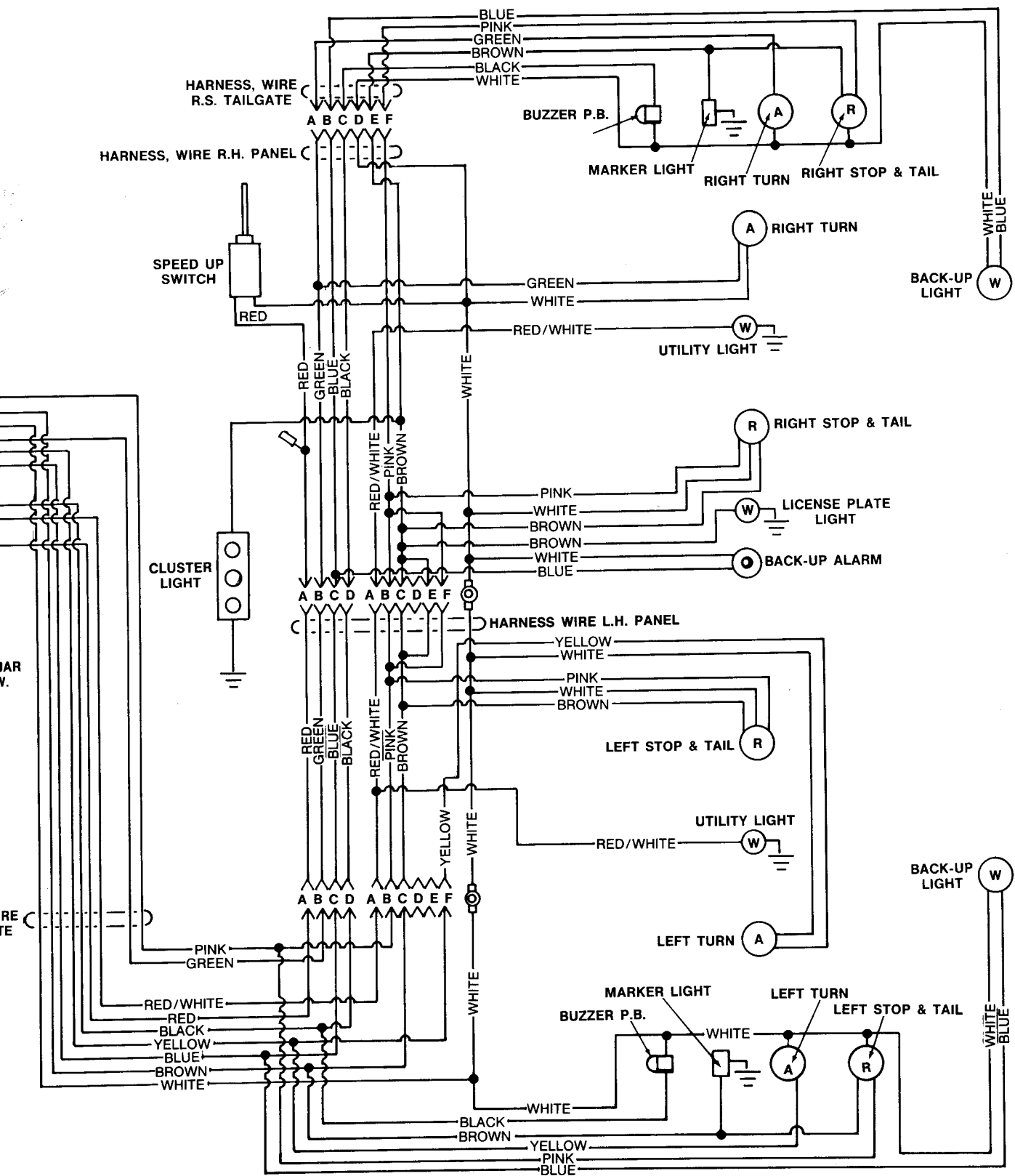
AFTER SERIAL NO. AL2039 (CLAMP AND TELESCOPIC)



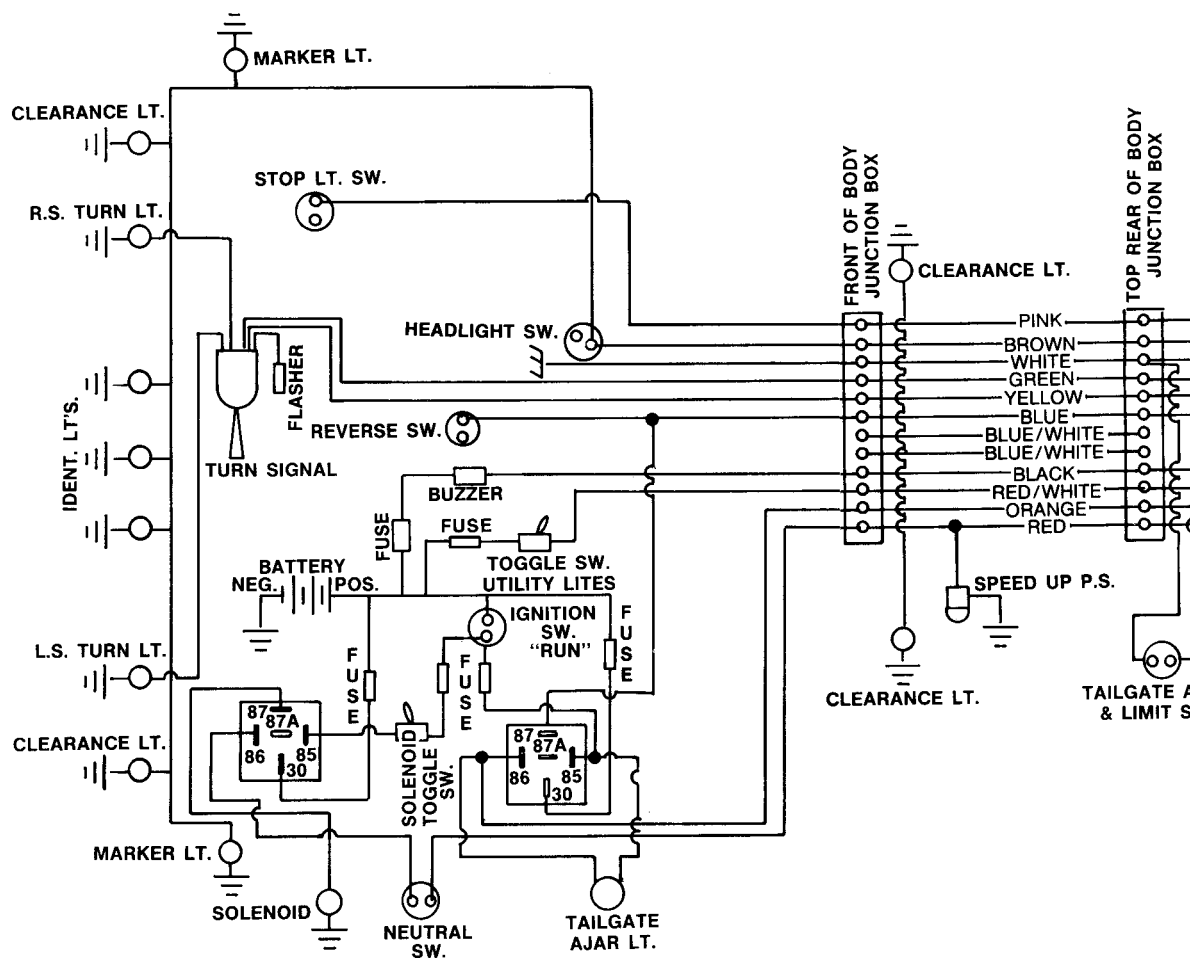


SECTION 9

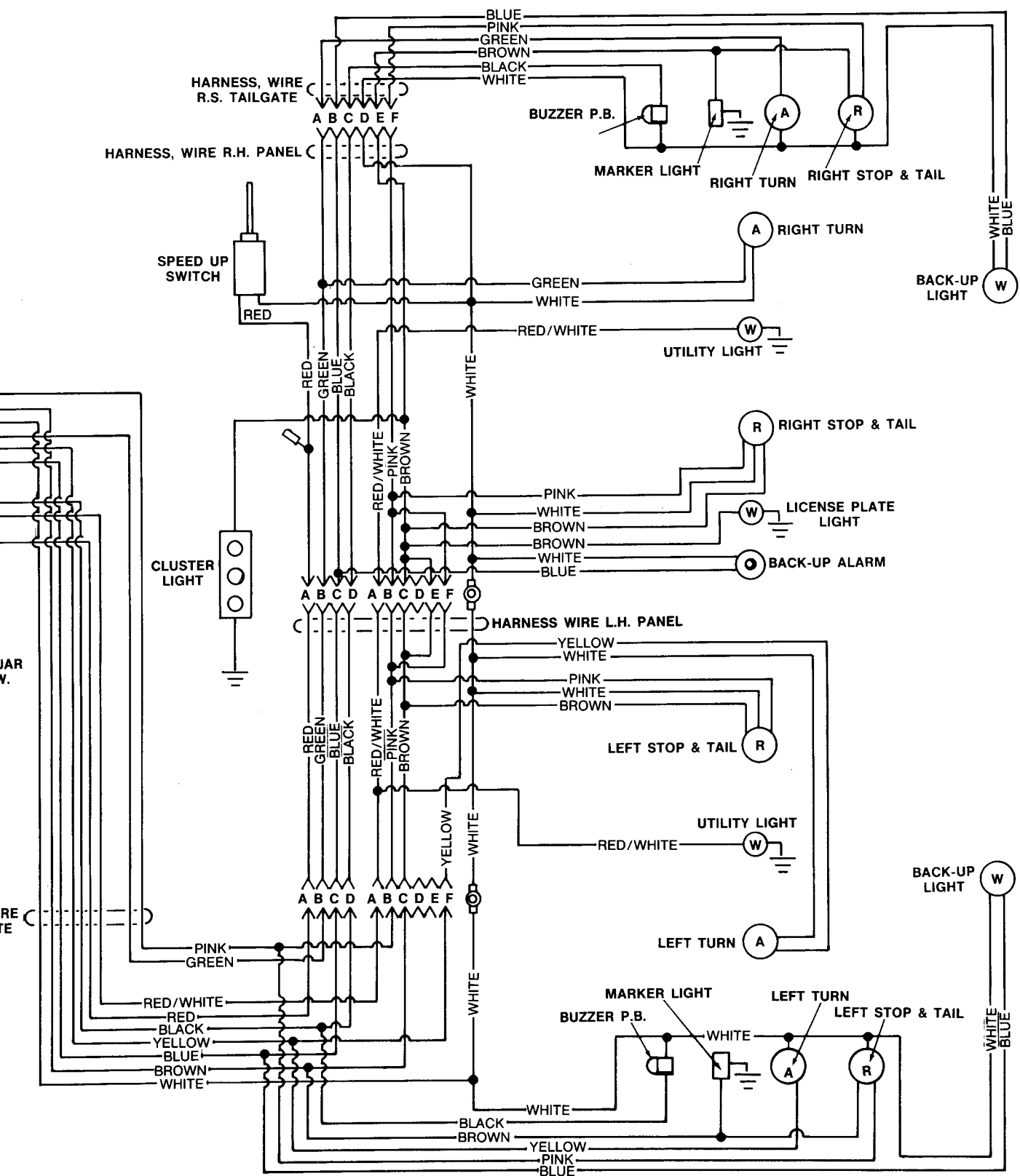
SERVICE AND REPAIR



ELECTRICAL SCHEMATIC UNITS DELIVERED AFTER JULY 1, 1992



HARNESS, W
L.S. TAILGA



GENERAL

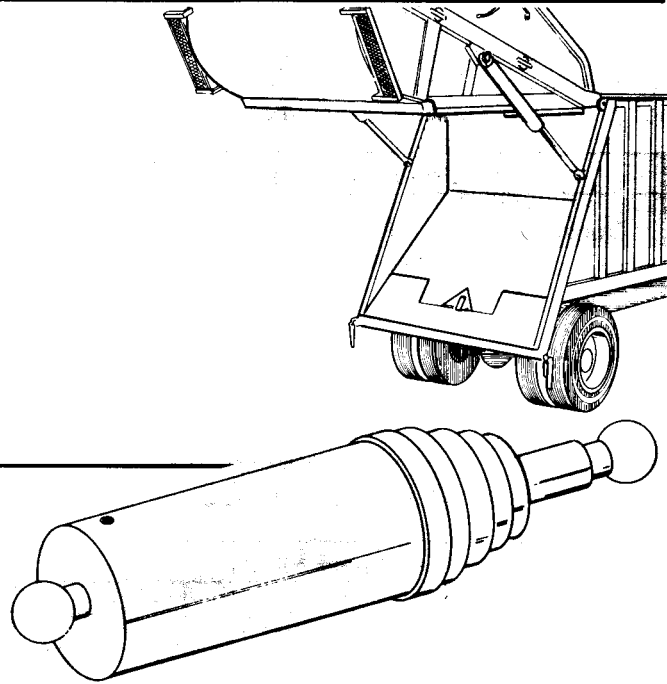
The telescopic pushout cylinder option enables the pushout plate to be moved the entire length of the body with one stroke of the cylinder. This option replaces the clamping mechanism, pushout bar, sequence pilot check (SPC) valve, and pushout cylinder.

OPERATION

The multi-stage cylinder (telescopic) is operated as explained in Section 3, OPERATION. The operator can extend or retract the cylinder and thus position the pushout plate at the front or rear of the body. To limit the amount of force when moving the pushout plate to the rear, a pressure reducing circuit is incorporated.

NOTE

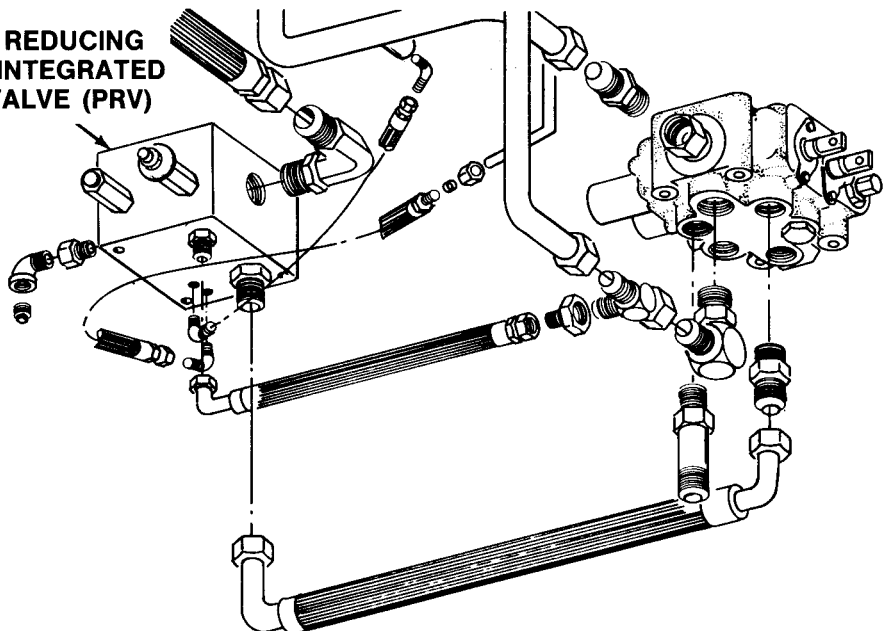
Two (2) different systems have been used. The first system explained is installed on units over serial number AL-1599 and is called the pressure reducing circuit. The second system is installed on units under serial number AL-1598 and is called the anti-back pack circuit.



PRESSURE REDUCING VALVE (AFTER SERIAL NUMBER 2040)

To protect the structural components pressure is reduced to the telescopic pushout cylinder through the use of a pressure reducing circuit in the Hydraulic Integrated Control Valve. Anytime the telescopic cylinder is extended pressure is limited.

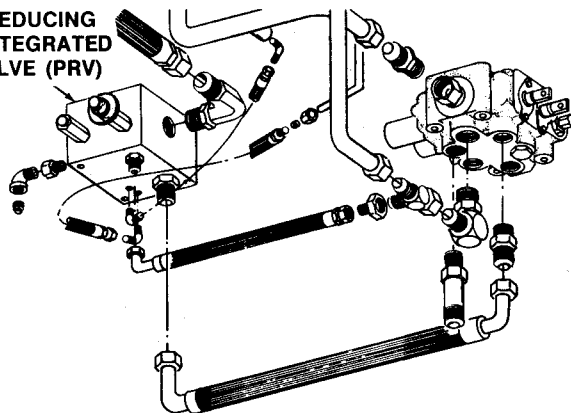
PRESSURE REDUCING HYDRAULIC INTEGRATED CONTROL VALVE (PRV)



CHECKOUT PROCEDURES

Checkout of the telescopic equipped unit is the same as the standard clamp system (See Section 7) except for pressure checking the pushout cylinder.

PRESSURE REDUCING
HYDRAULIC INTEGRATED
CONTROL VALVE (PRV)



Operational Status

Truck	Off	Keys	Removed
-------	-----	------	---------

1. Remove plug from Port G-3. Install 0-3000 psi pressure gauge in G-3. Or install a 0-3000 psi pressure gauge to the quick disconnect on the case end of the telescopic cylinder.

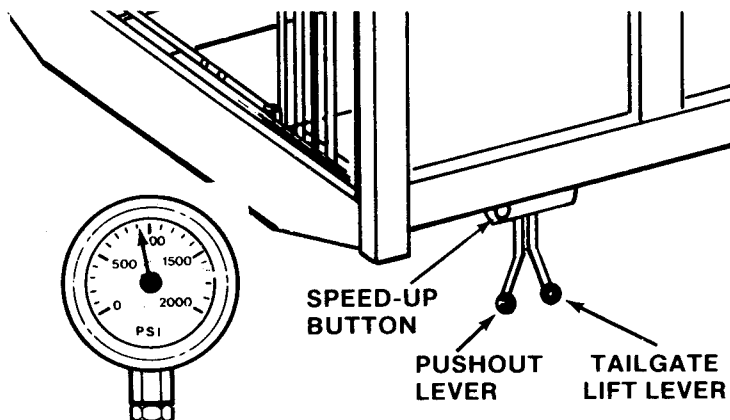
CHECK PUSHOUT PRESSURE

Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
-------	---------	-----	---------	----------	----

This is to verify proper adjustment of the pressure reducing function of the PRV valve.

2. Depress the speed-up button.
3. Move the pushout control lever to fully extend the telescopic cylinder.
4. Hold the lever and read the gauge:
Pressure should be 900 psi.



CHECK TELESCOPIC CYLINDER RETRACTION (MANUAL)

Operational Status

Truck	Running	PTO	Engaged	Sol. Sw.	On
-------	---------	-----	---------	----------	----

1. Move the pushout control lever forward to fully retract the pushout cylinder.

NOTE

DO NOT HOLD SPEED-UP BUTTON.

2. As the cylinder retracts and pulls the pushout plate toward the front of the body, the pressure gauge should indicate a maximum of 1650 psi. The pressure may be less if the plate slides easily and there is minimal resistance.
—If the pressure is less than 1650 psi and the cylinder does not retract, the cylinder is by-passing and must be repaired.

NOTE

Contact your local authorized Leach distributor before disassembling any telescopic cylinder.

—If the cylinder retracts in a continuous movement continue to use.

CHECK TELESCOPIC RESISTANCE CIRCUIT

Operational Status			
Truck	Off	Keys	Removed

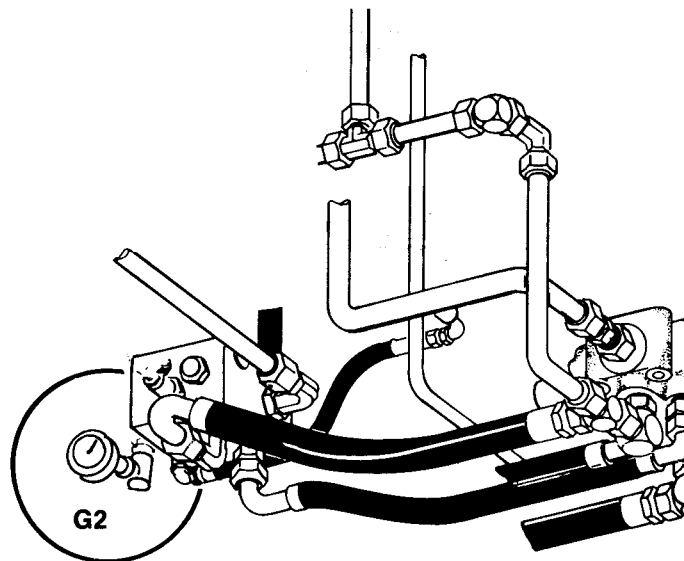
1. Install a snubber gauge at elbow in port "G2" of the valve block.

Operational Status					
Truck	Running	PTO	Engaged	Sol. Sw.	On

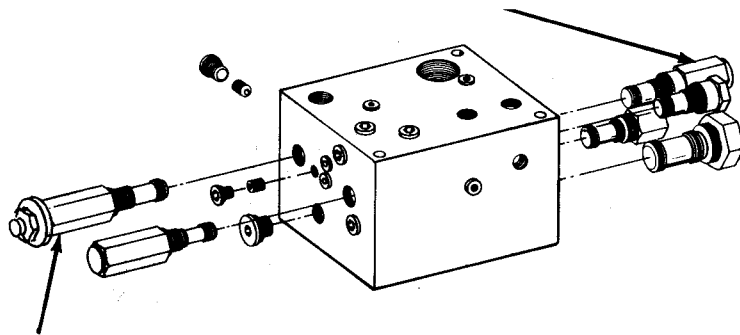
2. Cycle the unit while loading refuse.
3. As refuse is compacted in the body, the pressure gauge should indicate increased pressure. When sufficient refuse is loaded to require movement of the pushout plate, the cylinder will retract as pressure increases to 1000 psi. Retraction continues until the carrier plate valve section shifts to neutral. The gauge should indicate 1500 psi at knockout.

The resistance cartridge may be adjusted to tailor loads to operating requirements. See adjustment procedures listed under empty body checks.

Following knockout the pushout plate movement will stop, thus maintaining compaction force on the load. This same process is repeated each time sufficient refuse is loaded to force the pushout plate forward.



PRESSURE REDUCING CARTRIDGE



**ADJUSTABLE
RESISTANCE CARTRIDGE**

CHECK TELESCOPIC RESISTANCE
CIRCUIT WHEN BODY IS EMPTY

Operational Status			
Truck	Off	Keys	Removed

CAUTION

The engine must be off while performing checks.

- 1. Remove the plug from ports "G4" and "G2" on the side of the valve block.
- 2. Disconnect the hose, remove the fitting from port "CC" on the bottom of the valve block and install the plug removed from "G2".

NOTE

Most of the connections are straight thread o-ring. Do not use pipe thread.

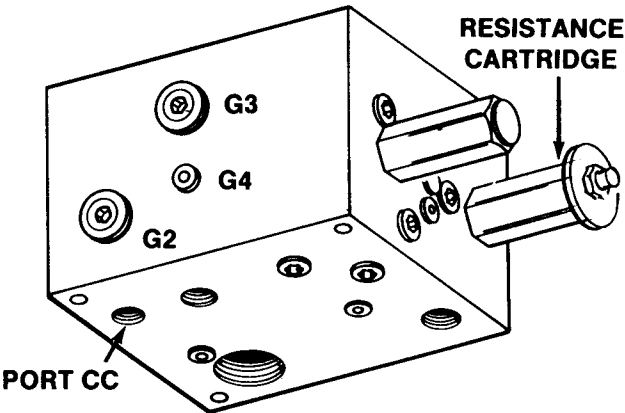
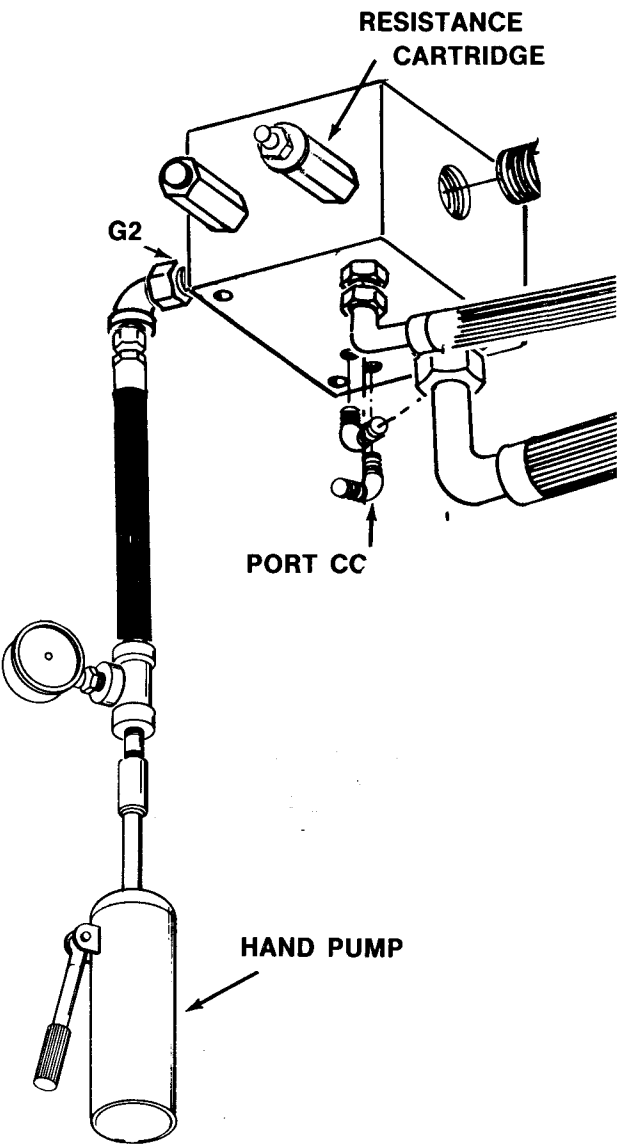
- 3. Remove the plug from port "G2" on the side of the valve block. Connect a pump capable of producing 2000 psi and a pressure gauge to this port. Again, use only a straight thread connector to attach the power source to the valve block.
- 4. Pump source at a steady and moderate rate. The resistance setting is measured by reading the gauge as fluid flows from port "G4". A steady pumping rate will produce an accurate reading as fluid is vented through port "G4".

STANDARD ALPHA RESISTANCE SETTINGS:
ALL BODY SIZES — 1000 PSI.

ADJUSTMENT

Operational Status			
Truck	Off	Keys	Removed

- 5. Should the pressure reading be above or below the standard setting, the resistance cartridge should be adjusted.
- 6. Loosen the locknut and turn the Allen wrench clockwise to increase or counter-clockwise to decrease pressure reading. One quarter turn equals approximately 125 psi.
- 7. After adjusting the valve, retighten the locknut and recheck the pressure to verify the setting.



TROUBLESHOOTING

GENERAL (AFTER SERIAL NUMBER 2040)

The first step in any repair process is identifying the cause of the problem. The Troubleshooting charts shown in Section 8 (Troubleshooting) deal with the overall unit. The diagnostic charts shown below suggest possible remedies when dealing with the telescopic pushout system.

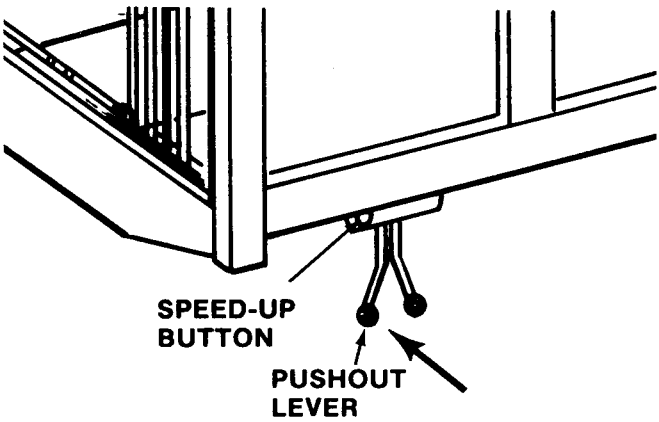
POSSIBLE CAUSE	REMEDY
LOUD SQUEALING NOISE WHEN MANUALLY RETRACTING CYLINDER	
1. Excessive fluid flow being forced through main relief in 2-spool valve.	1a. Release speed-up button. 1b. Only partially pull (feather) control handle. 1c. Slightly increase or decrease main relief pressure setting. See SECTION 7, CHECKOUT.
LOAD WILL NOT PUSHOUT	
1. Less than full pressure in the telescopic cylinder. 2. Operator trying to push load out against pile of refuse, dirt, or bank of hill.	1a. Check anti-backpacking components. See SECTION 10, TELESCOPIC CHECKOUT. 1b. Perform test for leaking cylinder and repair. 1c. Adjust main relief pressure. See SECTION 7, CHECKOUT. 1d. Replace pump, see SECTION 9, SERVICE AND REPAIR. 2. Move unit forward to finish unloading.
PUSHOUT PLATE SLIDES FORWARD TOO FAST WHILE PACKING REFUSE	
1. Cylinder bypassing. 2. Resistance setting too low.	1. Perform test for leaking cylinder. See SECTION 7, CHECKOUT. 2. Adjust resistance cartridge. See earlier in this section.
PUSHOUT PLATE WILL NOT SLIDE FORWARD AUTOMATICALLY	
1. Resistance setting too high. 2. Packer plate not applying full force to move pushout plate forward.	1. Adjust resistance setting. See earlier in this section. 2a. Check pressures. See SECTION 7, CHECKOUT. 2b. Check pump. See SECTION 7, CHECKOUT.
CARRIER AND PACKING PLATE STOP SHORT OF HOME POSITION AFTER EACH CYCLE	
1. Unit full. 2. Resistance too high. 3. Packer plate does not deliver full force.	1. Empty packer. 2. Reduce resistance setting. See earlier in this section. 3. See SECTION 8, TROUBLESHOOTING.

OPTIONAL TELESCOPIC PUSHOUT

TROUBLESHOOTING

HYDRAULIC OPERATION

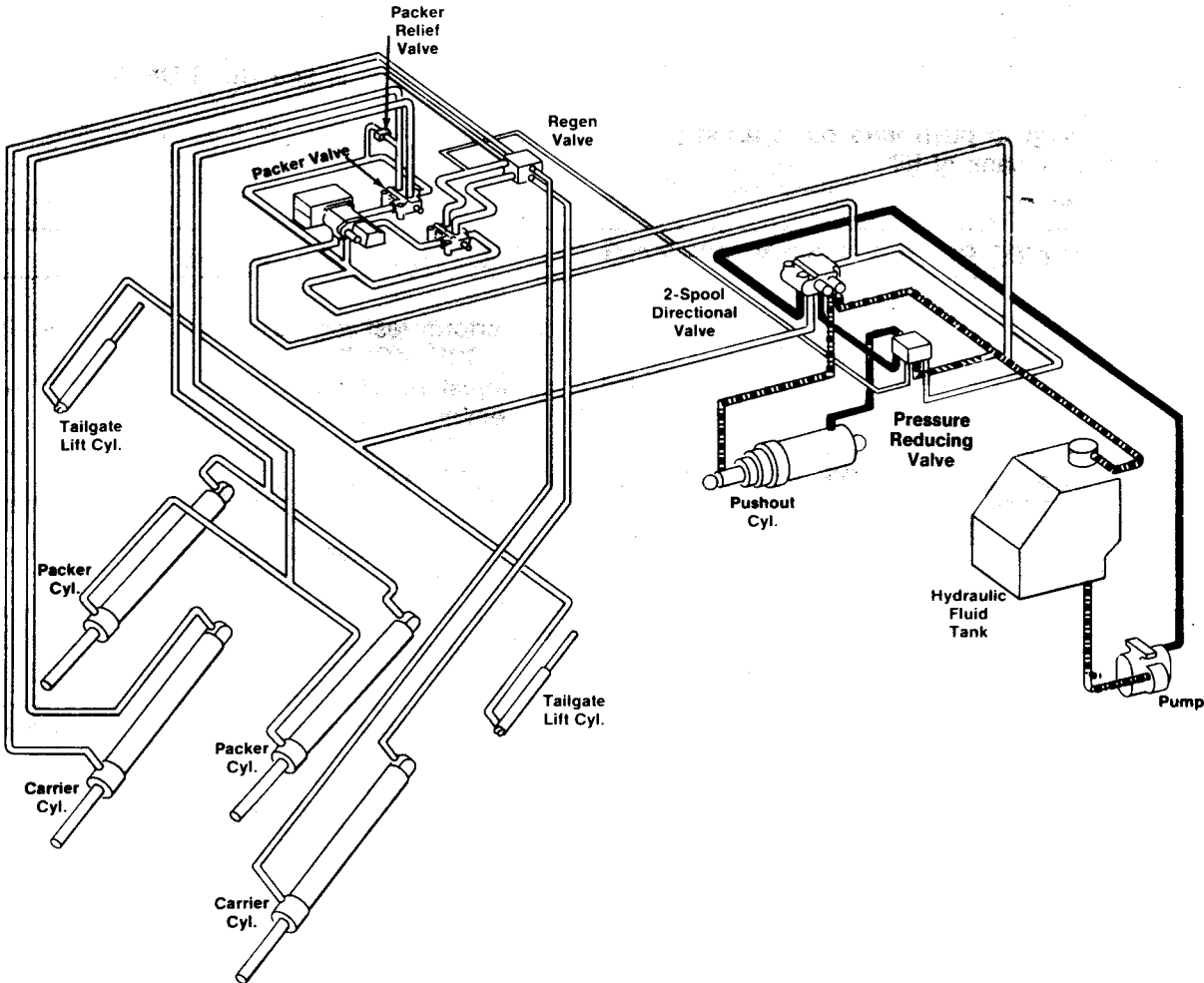
The telescopic hydraulic system works the same as the standard system (see flow charts in Section 8) except as described below.



MOVING PUSHOUT PLATE TO REAR FOR LOADING (AFTER SERIAL NUMBER 2040)

OPERATOR ACTION

The operator moves the pushout lever rearward while depressing the speed up button.

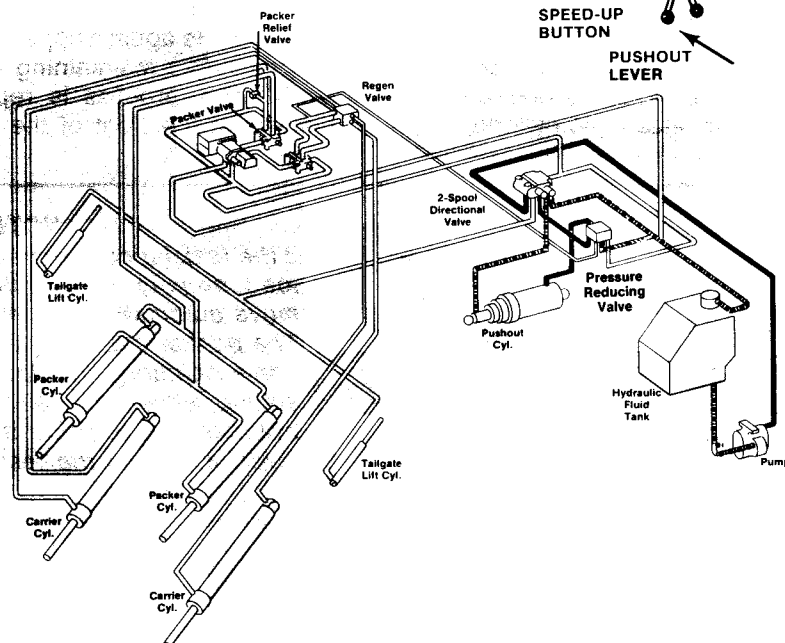


EJECTING LOAD (AFTER SERIAL NUMBER 2040)

OPERATOR ACTION

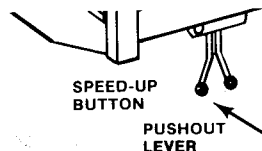
The operator moves the pushout lever rearward while depressing the speed-up button.

Pressure 
Return 
Trapped 



EJECTING A LOAD

Fluid flows from the 2-spool directional valve through the resistance and pressure reducing valve. When the pushout lever is moved rearward the pressure reducing valve bleeds fluid off so the pressure within the cylinder cannot exceed 900 psi.



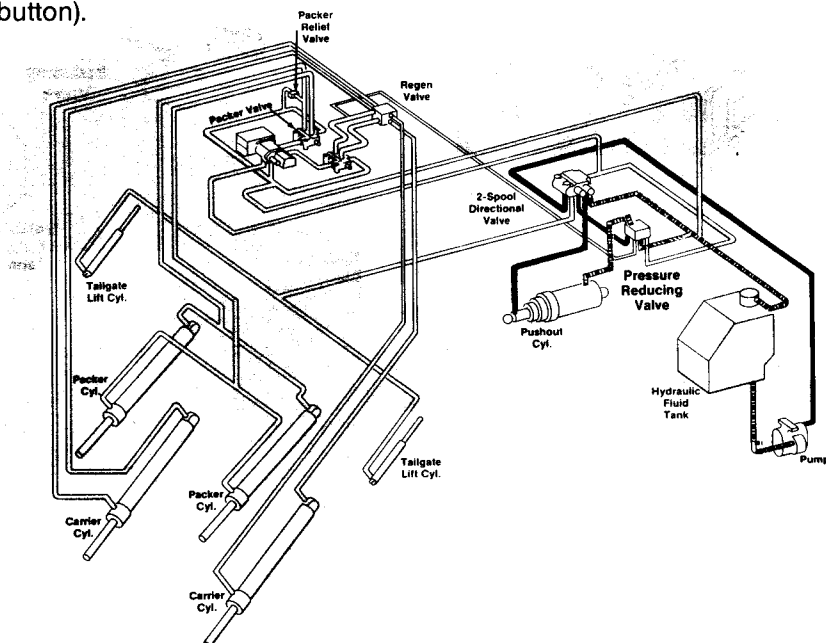
RETRACTING PUSHOUT CYLINDER (MANUALLY) (AFTER SERIAL NUMBER 2040)

OPERATOR ACTION

The operator pulls the pushout lever forward. (Do not use the speed-up button).

HYDRAULIC SEQUENCE

Fluid flows from the 2-spool directional valve directly to the rod end of the telescopic cylinder and the cylinder retracts. Exhaust fluid flows directly through the telescopic valve block and 2-spool valve to tank.



RESISTANCE CIRCUIT DURING PACKING CYCLE (AFTER SERIAL NUMBER 2040)

HYDRAULIC SEQUENCE

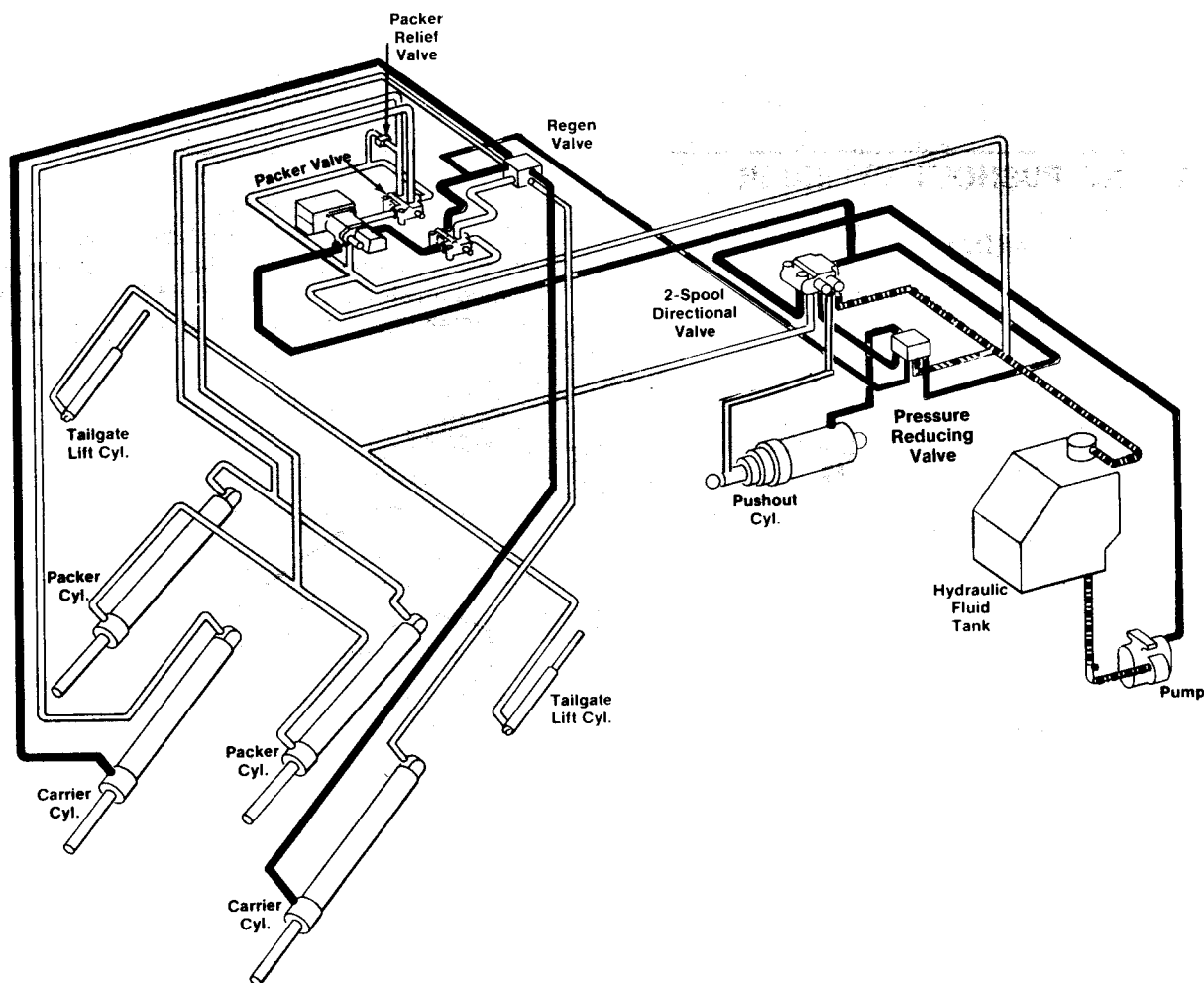
To begin loading the telescopic pushout cylinder is fully extended with the pushout plate at the extreme rear of the body. As refuse is compacted, the pressure inside the carrier cylinders is being monitored by the resistance cartridge. When the pressure in the carrier cylinders reaches a preset level (1000 psi on all body sizes) the resistance cartridge is opened allowing fluid to escape from the telescopic cylinder

case end which results in the pushout plate being moved forward by the compacted refuse. When the main operating valve shifts to neutral (knockout), pump pressure reduces and a check cartridge closes so fluid is again trapped in the telescopic pushout cylinder, thus maintaining compaction force on the load. This process is repeated until the pushout plate is at the front of the body.

NOTE

If the resistance pressure is set for maximum load density, the pushout plate may not move automatically to the front of the body. The packer plate may also stop short of the home position. To operate the unit at this setting, either manually retract the pushout cylinder and override the packer operating lever or reduce the resistance pressure.

Pressure 
Return 
Trapped 

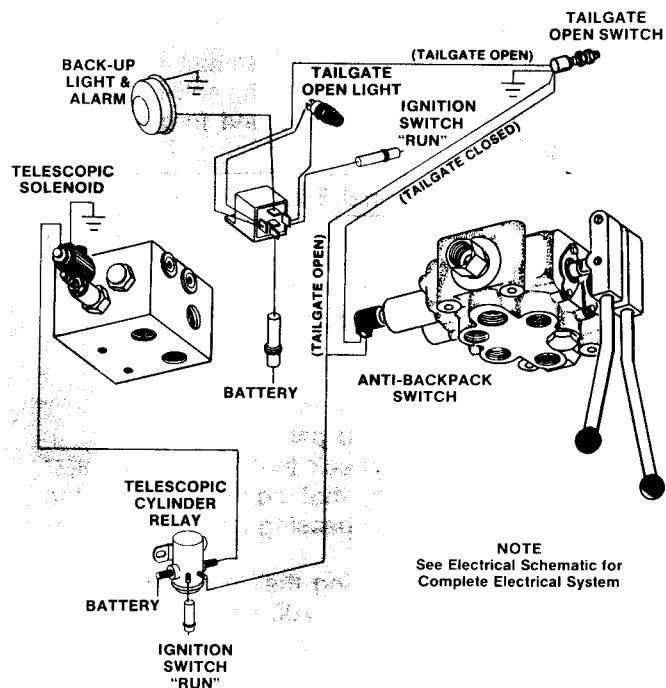


ANTI-BACKPACKING COMPONENTS (BEFORE SERIAL NUMBER 2041)

The telescopic pushout functions with both electrical and hydraulic components. The electrical circuit limits the hydraulic operation and provides a safety warning to the operator.

The telescopic electrical system functions with two relays located in the chassis cab and three components in the packer body. The key component is the tailgate open (ajar) switch. This two position switch must be kept in adjustment to ensure that when the tailgate is closed, continuity is maintained through the anti-backpacking switch, triggering the telescopic relay and energizing the telescopic solenoid. An indication of a properly adjusted and functioning tailgate open switch is the dash mounted tailgate open warning light, which will only illuminate when the tailgate is raised.

When the tailgate begins to open, the tailgate open warning light will illuminate and the back-up lights and alarm will be activated. At the same time, the telescopic relay remains energized by continuity from the tailgate switch. A thorough understanding of the electrical system is necessary prior to troubleshooting the telescopic pushout hydraulics using the flow charts and checkout procedures.

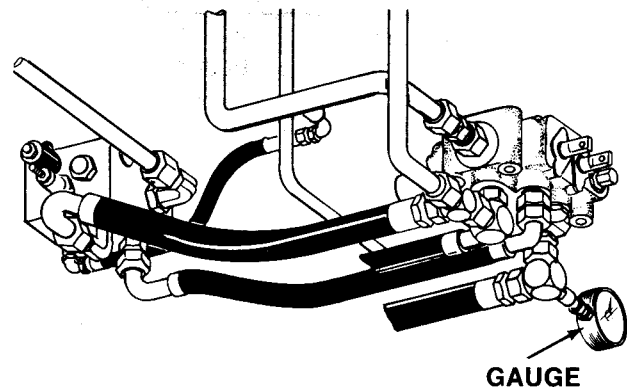


CHECKOUT PROCEDURES (BEFORE SERIAL NUMBER 2041)

Checkout of the telescopic equipped Alpha is the same as the standard clamp system (See Section 7) except for pressure checking the pushout cylinder.

Operational Status			
Truck	Off	Keys	Removed

1. Install gauge at test port as shown.



CHECK PUSHOUT PRESSURE (TAILGATE CLOSED)

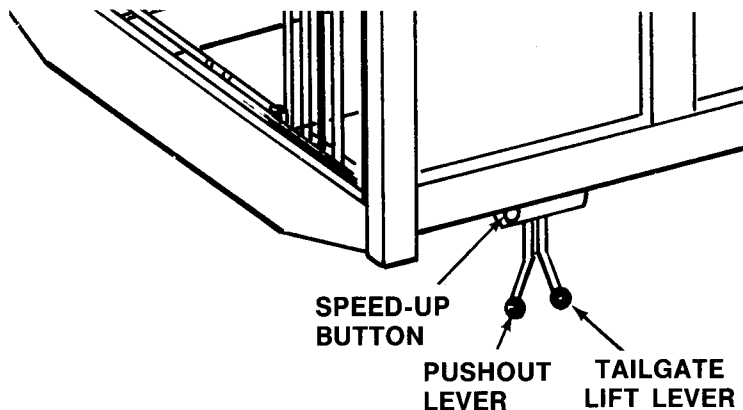
This check is to verify proper adjustment and functioning of the tailgate open switch, anti-backpack switch, telescopic relay, solenoid and force limiting hydraulic circuits.

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

- Depress the speed-up button.
- Move the pushout control lever to fully extend the telescopic cylinder.
- Hold lever and read gauge: Pressure should be 700 psi
- If above 700 psi — check that the tailgate ajar light is off, indicating that continuity from the tailgate open switch is passing through the anti-backpack switch.
- If no current is energizing the solenoid and the pressure registers above 700 or below 500 psi -the force limiting cartridge must be adjusted or replaced.

CAUTION

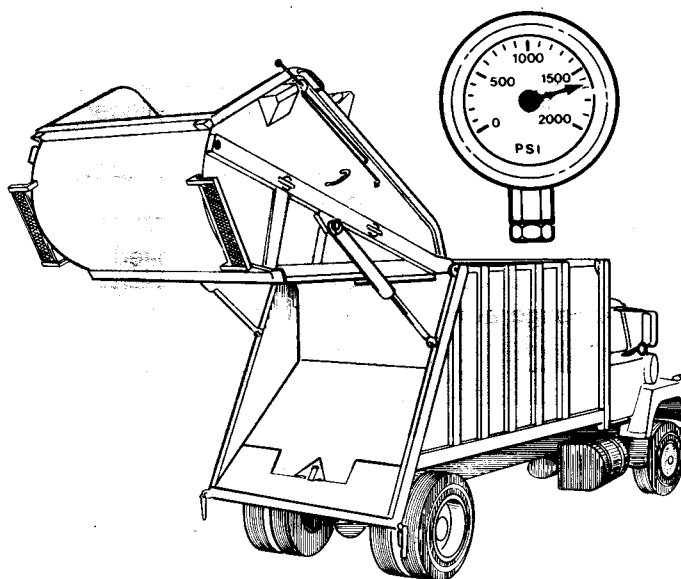
The tailgate warning system must work properly to prevent possible personal injury or damage to the unit.



CHECK PUSHOUT PRESSURE (TAILGATE RAISED)

Operational Status				
Truck	Running	PTO	Engaged	Sol. Sw. On

- Release tailgate clamps.
- Depress and hold speed-up button.
- Pull the tailgate lift lever to raise the tailgate. The dash mounted warning light "TAILGATE OPEN" should illuminate and the backup lights and alarm should activate.
- Note the pressure reading on the gauge as the tailgate is fully raised. The pressure should be 1650 psi. If not - see SECTION 7, CHECK-OUT for main relief adjustment or pump performance.
- Push the speed-up button and move the pushout control lever to fully extend the telescopic cylinder.
- Again hold the pushout control lever and read gauge: Pressure should be 1650 —
 - If still 700 psi, check wiring from tailgate switch to relay and relay to solenoid. Solenoid must be energized to allow full pressure (1650 psi) to move pushout cylinder.
 - If between 700 and 1650 psi, the force limiting components are functioning properly but the telescopic cylinder may have leaking seals causing a pressure drop.



OPTIONAL TELESCOPIC PUSHOUT

CHECK TELESCOPIC CYLINDER RETRACTION (MANUAL)

1. Move the pushout control lever outward to fully retract the pushout cylinder.

NOTE

DO NOT HOLD SPEED-UP BUTTON.

2. As the cylinder retracts and pulls the pushout plate toward the front of the body, the pressure gauge should indicate 1650 psi.
— If the pressure is less than 1650 and the cylinder does not retract, the cylinder is bypassing and must be repaired.

NOTE

Contact your local authorized Leach distributor before disassembling any telescopic cylinder.

— If cylinder retracts in a continuous movement with a pressure below 1650 psi, continue to use the cylinder but monitor overall unit performance for other indications of wear.

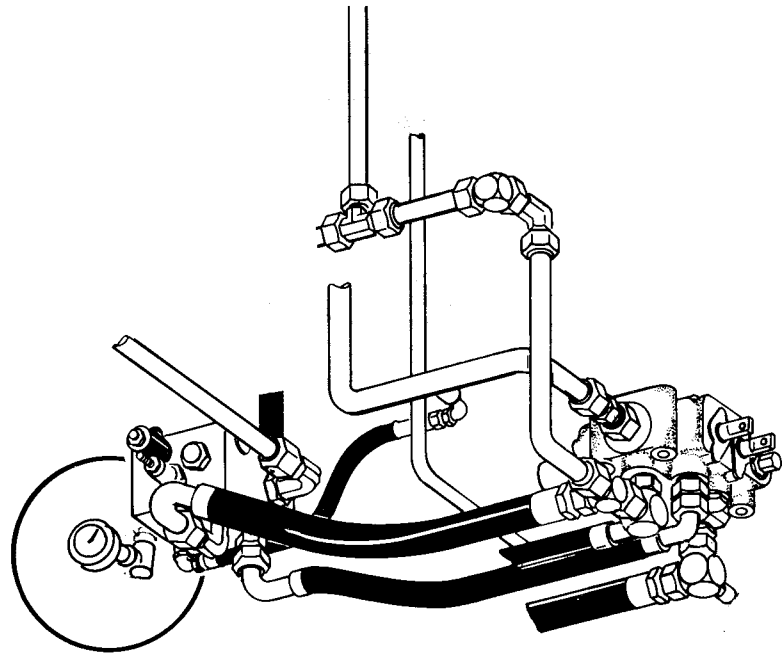
CHECK TELESCOPIC RESISTANCE CIRCUIT (BEFORE SERIAL NUMBER 2041)

Operational Status			
Truck	Off	Keys	Removed

1. Install snubber gauge at elbow in port "G2" of valve block.

NOTE

The electrical system which energizes the telescopic solenoid must be functioning or compaction rates will be below normal due to the bleeding off of internal telescopic cylinder pressure which is required to maintain resistance force against the load.

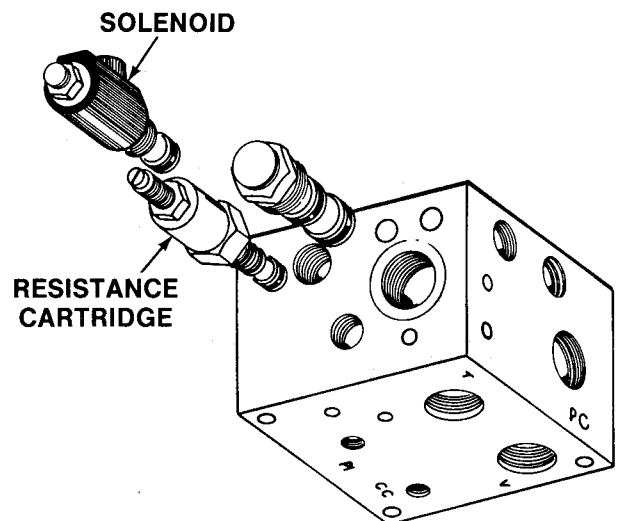


Operational Status					
Truck	Running	PTO	Engaged	Sol. Sw.	On

2. Cycle unit while loading refuse.
3. As refuse is compacted in the body, the pressure gauge should indicate increased pressure. When sufficient refuse is loaded to require movement of the pushout plate, the cylinder will retract as pressure increases to 1000 psi. Retraction continues until knockout. Gauge should indicate 1400 psi at knockout.

The resistance cartridge may be adjusted to tailor loads to operating requirements. See adjustment procedures listed under empty body checks.

Following knockout pushout plate movement will stop, thus maintaining compaction force on the load. This same process is repeated each time sufficient refuse is loaded to force the pushout plate forward.



OPTIONAL TELESCOPIC PUSHOUT

CHECK TELESCOPIC RESISTANCE CIRCUIT WHEN BODY IS EMPTY (BEFORE SERIAL NUMBER 2041)

CAUTION

Engine must be off while performing checks.

1. Remove plug from port "G3" on side of valve block.
2. Disconnect hose, remove fitting from port "CC" on bottom of valve block and install plug removed from "G3".

NOTE

Most of the connections are straight thread o-ring. Do not use pipe thread.

NOTE

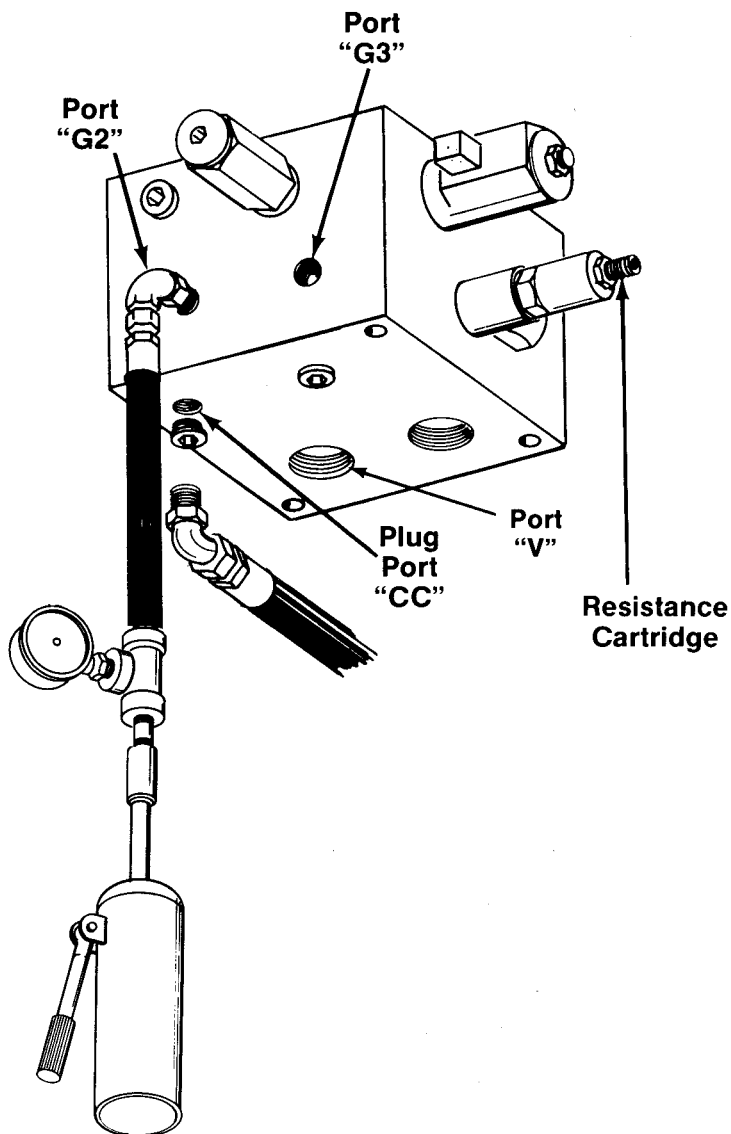
Check that an orifice plug has been installed. Remove the hose and fitting from port "V". A hex socket orifice plug should be screwed into the bottom of this port. The orifice size controls the resistance valve sensitivity.

3. Remove plug from port "G2" on side of valve block. Connect a pump capable of producing 1650 psi and a pressure gauge to this port. Again, use only a straight thread connector to attach power source to valve block. Installing an elbow into "G2" will make hose connection easier.
4. Pump power source at a steady and moderate rate. Resistance setting is measured by reading gauge as fluid flows from port "G3". A steady pumping rate will produce an accurate reading as fluid is vented through port "G3".

STANDARD ALPHA RESISTANCE SETTINGS:
ALL BODY SIZES — 1000 PSI.

ADJUSTMENT

5. Should the pressure reading be above or below the standard setting, the resistance cartridge should be adjusted.
6. Loosen the locknut and turn the Allen wrench clockwise to increase or counter-clockwise to decrease pressure reading. One quarter turn equals approximately 125 PSI.
7. After adjusting the valve, retighten the locknut and recheck the pressure to verify the setting.



TROUBLESHOOTING **(BEFORE SERIAL NUMBER 2041)** **GENERAL**

The first step in any repair process is identifying the cause of the problem. The troubleshooting charts shown in Section 8 (Troubleshooting) deal with the overall unit. The diagnostic charts shown below suggest possible remedies when dealing with the telescopic pushout system.

POSSIBLE CAUSE	REMEDY
LOUD SQUEALING NOISE WHEN MANUALLY RETRACTING CYLINDER	
1. Excessive fluid flow being forced through the main relief in the 2-spool valve.	1a. Release speed-up button. 1b. Only partially pull (feather) control handle. 1c. Slightly increase or decrease main relief pressure setting. See SECTION 7, CHECKOUT.
LOAD WILL NOT PUSHOUT	
1. Less than full pressure in the telescopic cylinder. 2. Operator trying to push load out against pile of refuse, dirt, or bank of hill.	1a. Check anti-backpacking components. See earlier in this section. 1b. Perform the test for leaking cylinder and repair. 1c. Adjust main relief pressure. See SECTION 7, CHECKOUT. 1d. Replace pump, see SECTION 9, SERVICE AND REPAIR. 2. Move unit forward to finish unloading.
PUSHOUT PLATE SLIDES FORWARD TOO FAST WHILE PACKING REFUSE	
1. Anti-backpacking components not working. 2. Cylinder bypassing. 3. Resistance setting too low. 4. Orifice Plug missing from HIC valve.	1a. Check tailgate open switch for faulty ground. 1b. Telescopic relay not being grounded through anti-backpack and/or tailgate open switches. 1c. Telescopic relay defective. 1d. Wire broken between telescopic relay, front junction box and telescopic solenoid. 2. Perform test for leaking cylinder. See SECTION 9. 3. Adjust resistance cartridge. See earlier in this section. 4. Install Plug.
PUSHOUT PLATE WILL NOT SLIDE FORWARD AUTOMATICALLY	
1. Resistance setting too high. 2. Packer plate not applying full force to move pushout plate forward.	1. Adjust resistance setting. See earlier in this section. 2a. Check pressures. See SECTION 7, CHECKOUT. 2b. Check pump. See SECTION 7, CHECKOUT.
CARRIER AND PACKING PLATE STOP SHORT OF HOME POSITION AFTER EACH CYCLE	
1. Unit full. 2. Resistance too high. 3. Packer plate does not deliver full force.	1. Empty packer. 2. Reduce resistance setting. See earlier in this section. 3. See SECTION 8, TROUBLESHOOTING.

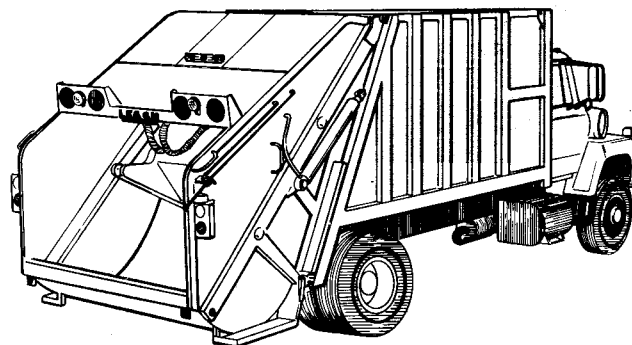


OPTIONAL TELESCOPIC PUSHOUT

TROUBLESHOOTING (BEFORE SERIAL NUMBER 2041)

HYDRAULIC OPERATION

The telescopic hydraulic system works the same as the standard system (see flow charts in Section 8) except as described below.



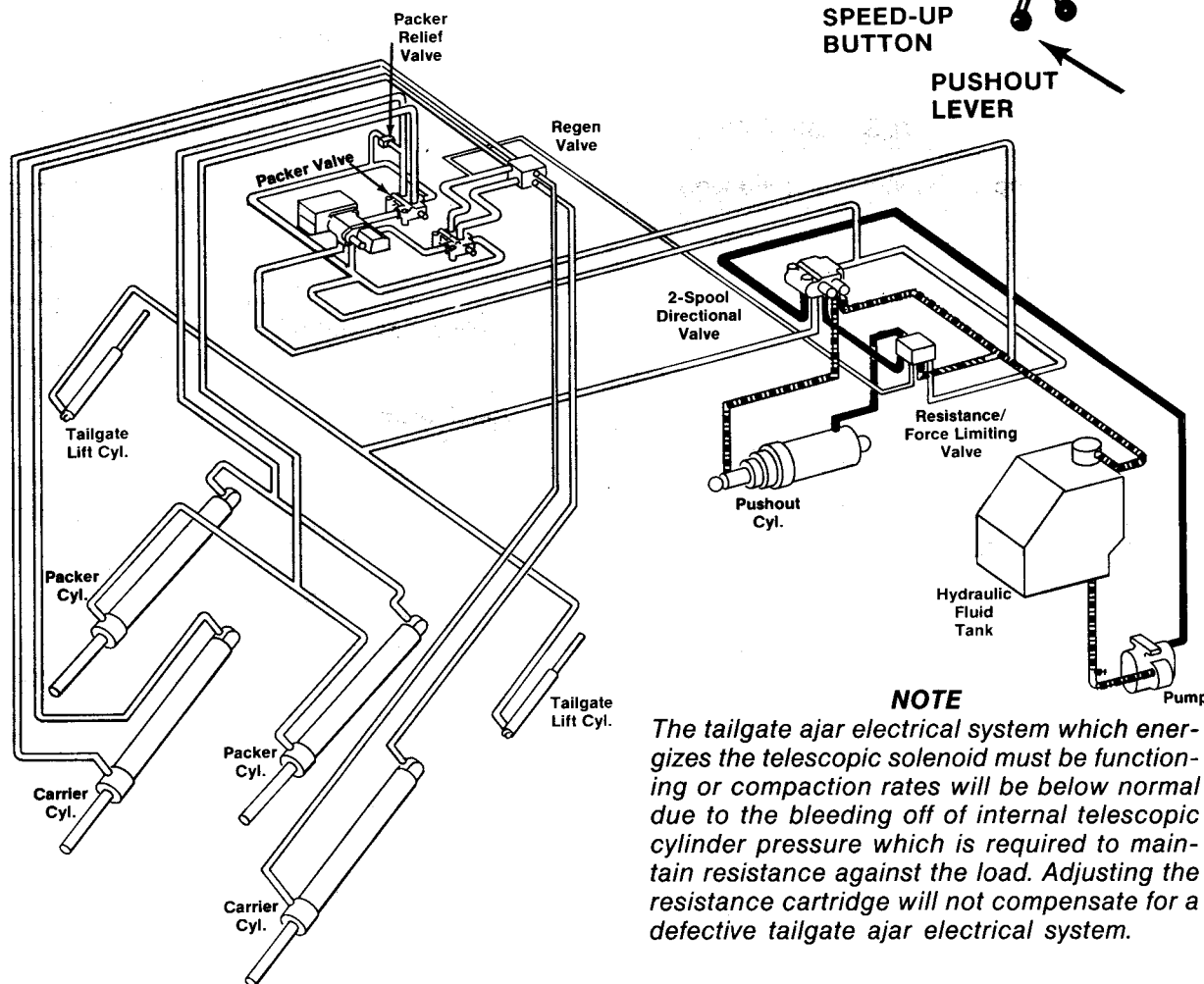
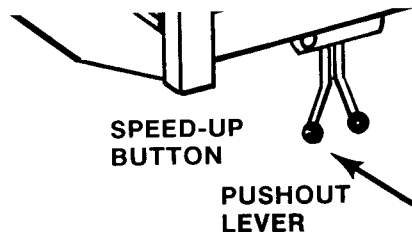
MOVING PUSHOUT PLATE TO REAR FOR LOADING (ANTI-BACK PACK CIRCUIT)

OPERATOR ACTION

Operator moves pushout lever inward while depressing speed up button.

Fluid flows from the 2-spool directional valve through the resistance and force limiting valve to the case end of the telescopic cylinder. When the pushout lever is moved inward with the tailgate closed, an electrical switch on the 2-spool valve breaks the continuity to the relay energizing the solenoid valve. The force limiting cartridge now bleeds off fluid so the pressure within the cylinder cannot exceed 700 psi.

Pressure 
Return 
Trapped 



NOTE

The tailgate ajar electrical system which energizes the telescopic solenoid must be functioning or compaction rates will be below normal due to the bleeding off of internal telescopic cylinder pressure which is required to maintain resistance against the load. Adjusting the resistance cartridge will not compensate for a defective tailgate ajar electrical system.

OPTIONAL TELESCOPIC PUSHOUT

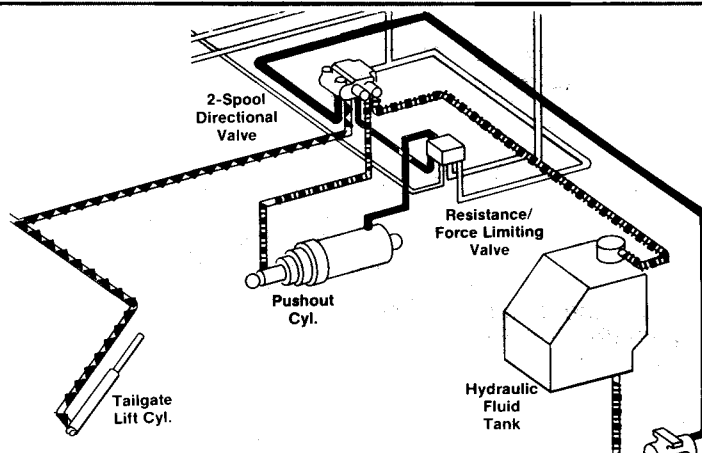
EJECTING LOAD

OPERATOR ACTION

The operator moves the pushout lever rearward while depressing the speed-up button.

HYDRAULIC SEQUENCE

Fluid flows from the 2-spool directional valve to the case end of the telescopic cylinder. Since the tailgate is raised and the dash mounted "tailgate open" light is illuminated, the pressure is not affected by the force limiting cartridge and full system pressure (1650 psi) is provided to eject the load.



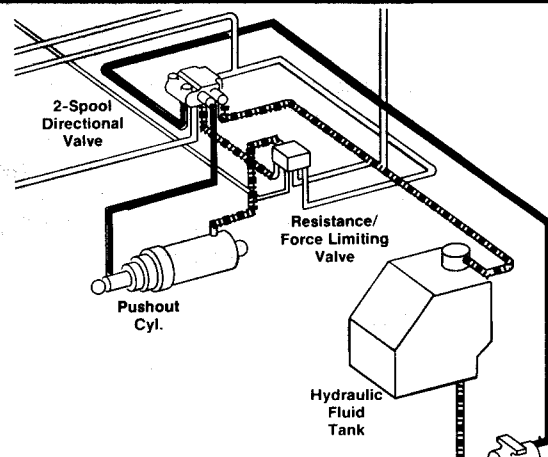
RETRACTING PUSHOUT CYLINDER (MANUAL)

OPERATOR ACTION

The operator pulls the pushout lever forward. (Do not use the speed-up button).

HYDRAULIC SEQUENCE

Fluid flows from the 2-spool directional valve directly to the rod end of the telescopic cylinder and the cylinder retracts. Exhaust fluid flows directly through the telescopic valve block and 2-spool valve to tank.



RESISTANCE CIRCUIT DURING PACKING CYCLE

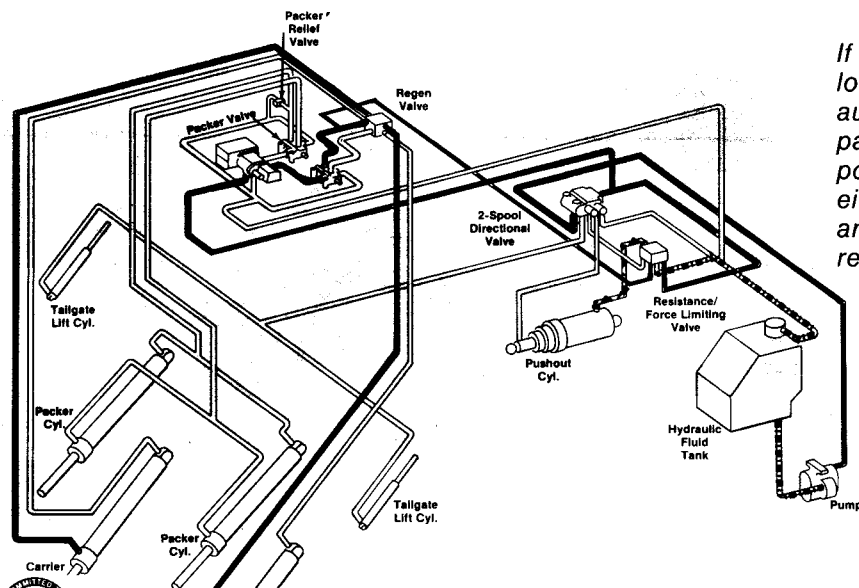
HYDRAULIC SEQUENCE




To begin loading the telescopic pushout cylinder is fully extended with the pushout plate at the extreme rear of the body. As refuse is compacted, the pressure inside the carrier cylinders is being monitored by the resistance cartridge. When the pressure in the carrier cylinders reaches a preset level (1000 psi on

all body sizes) the resistance cartridge is opened allowing fluid to escape from the telescopic cylinder case end which results in the pushout plate being moved forward by the compacted refuse. When the main operating valve shifts to neutral (knockout), pump pressure reduces and a check cartridge closes so fluid is again trapped in the telescopic pushout cylinder, thus maintaining compaction force on the load. This process is repeated until the pushout plate is at the front of the body.

NOTE

If the resistance pressure is set for maximum load density, the pushout plate may not move automatically to the front of the body. The packer plate may also stop short of the home position. To operate the unit at this setting, either manually retract the pushout cylinder and override the packer operating lever or reduce the resistance pressure.



Pressure 
Return 
Trapped 



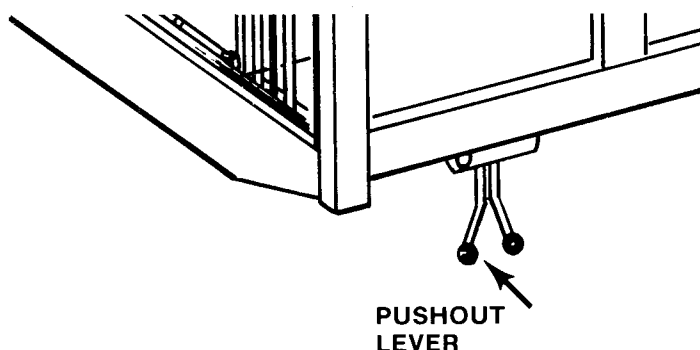
OPTIONAL TELESCOPIC PUSHOUT

SERVICE AND REPAIR

REMOVAL OF TELESCOPIC CYLINDER

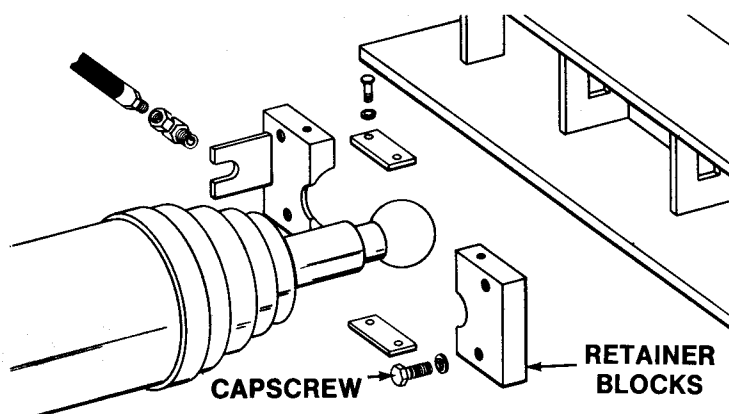
Operational Status					
Truck	Running	PTO	Engaged	Sol. Sw.	On

1. Push the pushout lever inward to extend the cylinder and move the pushout plate to the rear of the body.



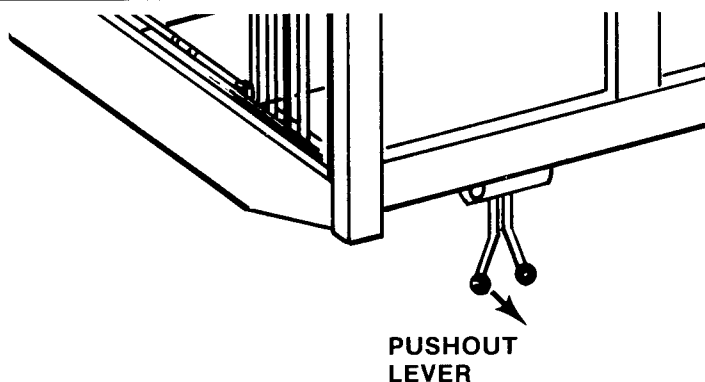
Operational Status			
Truck	Off	Keys	Removed

2. Disconnect the cylinder from the pushout plate by removing the capscrews and retainer blocks.



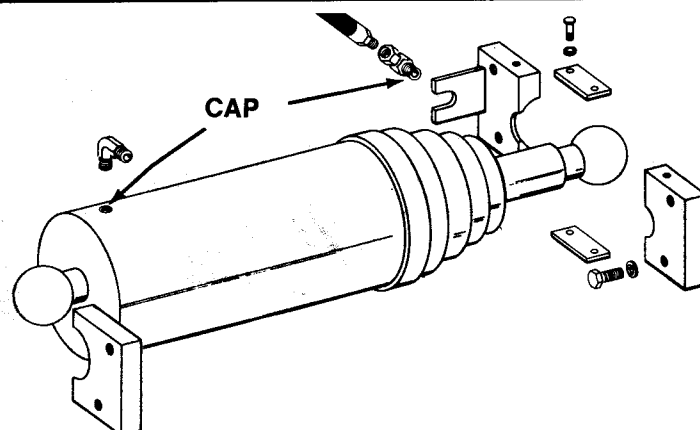
Operational Status					
Truck	Running	PTO	Engaged	Sol. Sw.	On

3. Pull the pushout lever outward and hold to completely retract the cylinder.



Operational Status			
Truck	Off	Keys	Removed

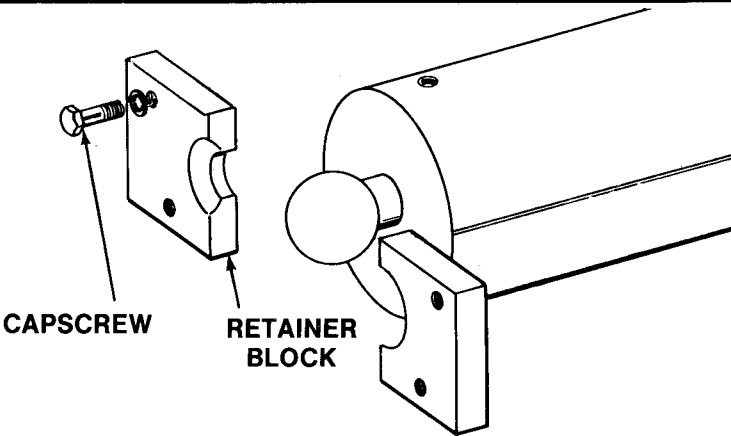
4. Disconnect and cap the hydraulic lines to the cylinder.



- 5. Disconnect the cylinder from the front of the body by removing the capscrews and retainer blocks.
- 6. Remove the cylinder from the body by using a suitable lifting device with a minimum lifting capacity of 1000 lbs.

NOTE

For more information about lifting devices and slings refer to Sec. 4, GENERAL REPAIR PRACTICES.

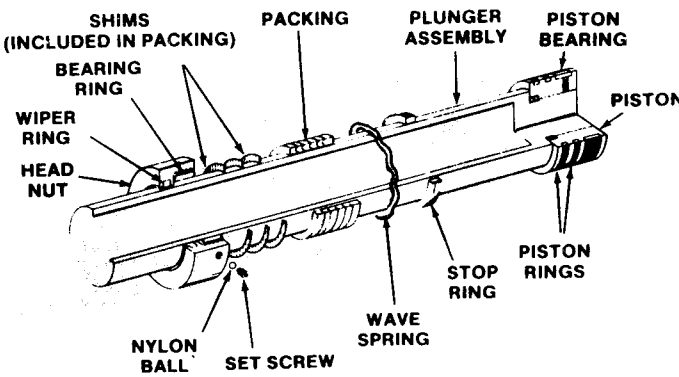


DISASSEMBLY AND REPAIR

NOTE

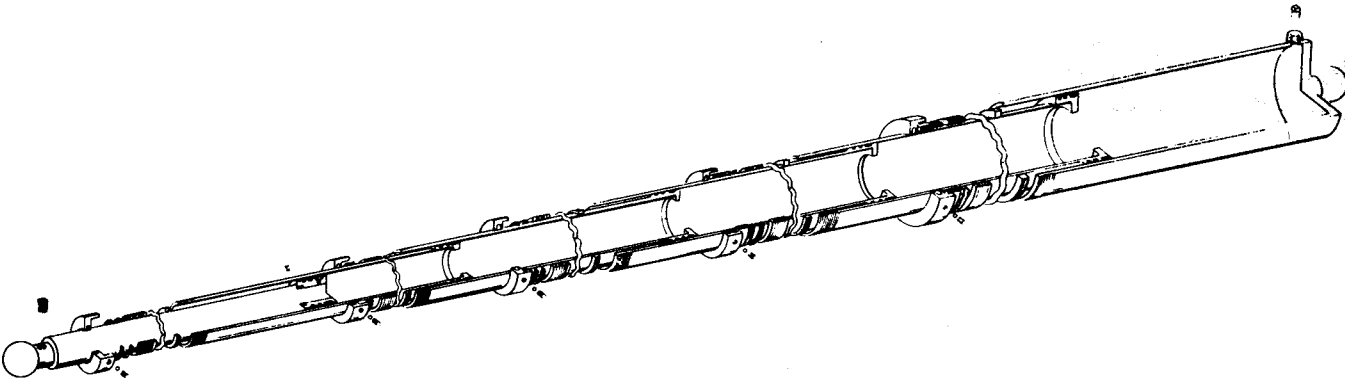
Check with your local Leach distributor before disassembly of the telescopic cylinder.

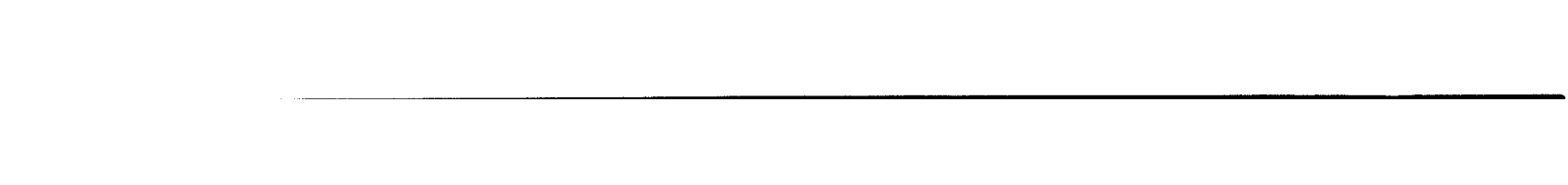
- 1. Secure the cylinder end to a floor stand or workbench.
- 2. Attach a sling or chain to the rod end of cylinder.
- 3. Refer to the accompanying view and disassemble the cylinder one stage at a time by loosening the setscrew, removing the packing nuts and retainer ring, operating the lifting device.



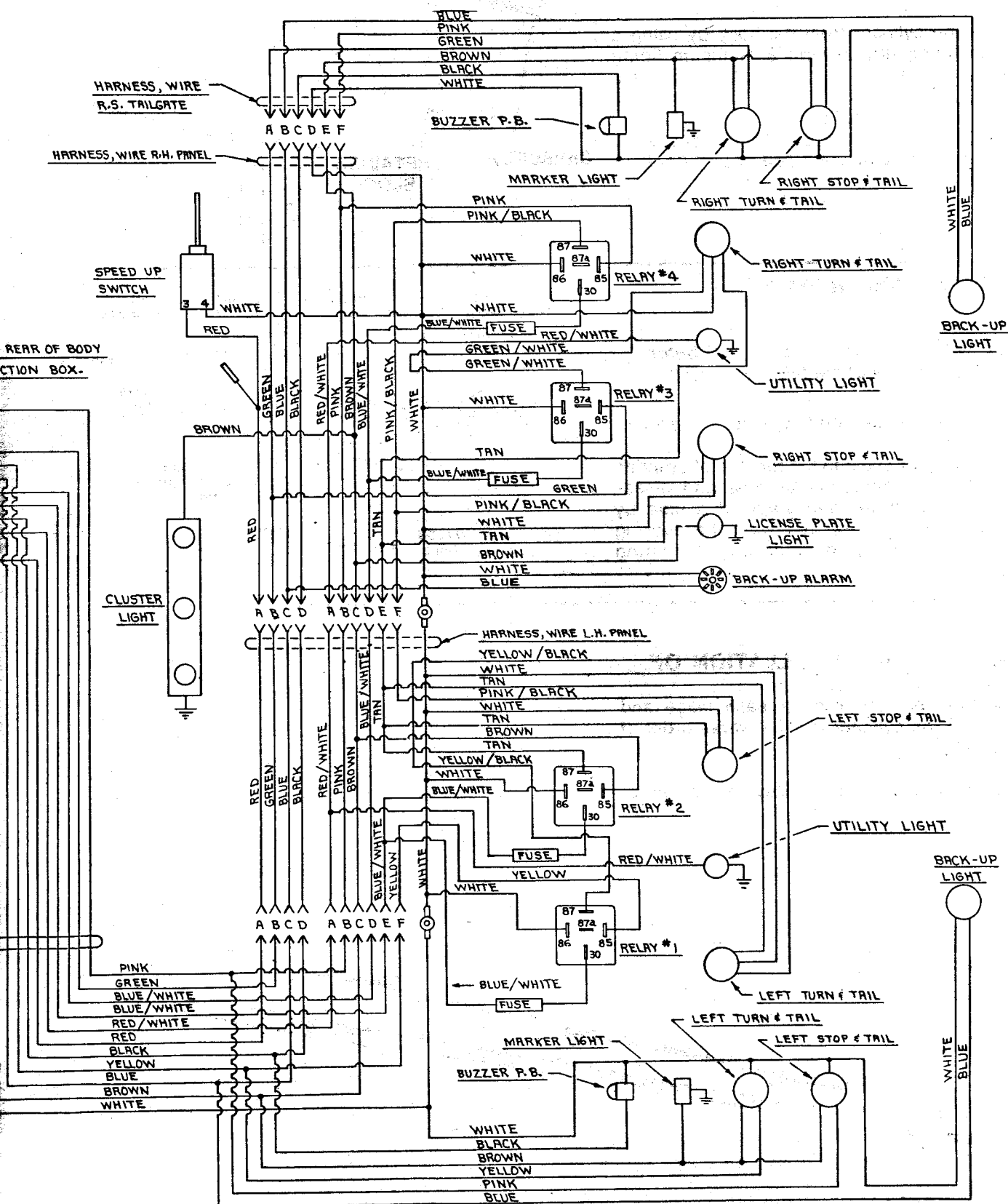
REASSEMBLY AND INSTALLATION OF TELESCOPIC CYLINDER

- 1. Replace the packing kits for each stage and reassemble the cylinder in the reverse order of disassembly.
- 2. Re-install the cylinder in reverse order of removal.





OPTIONAL TELESCOPIC PUSHOUT

ELECTRICAL SCHEMATIC — TELESCOPIC
(BEFORE SERIAL NO. 2041)

5.

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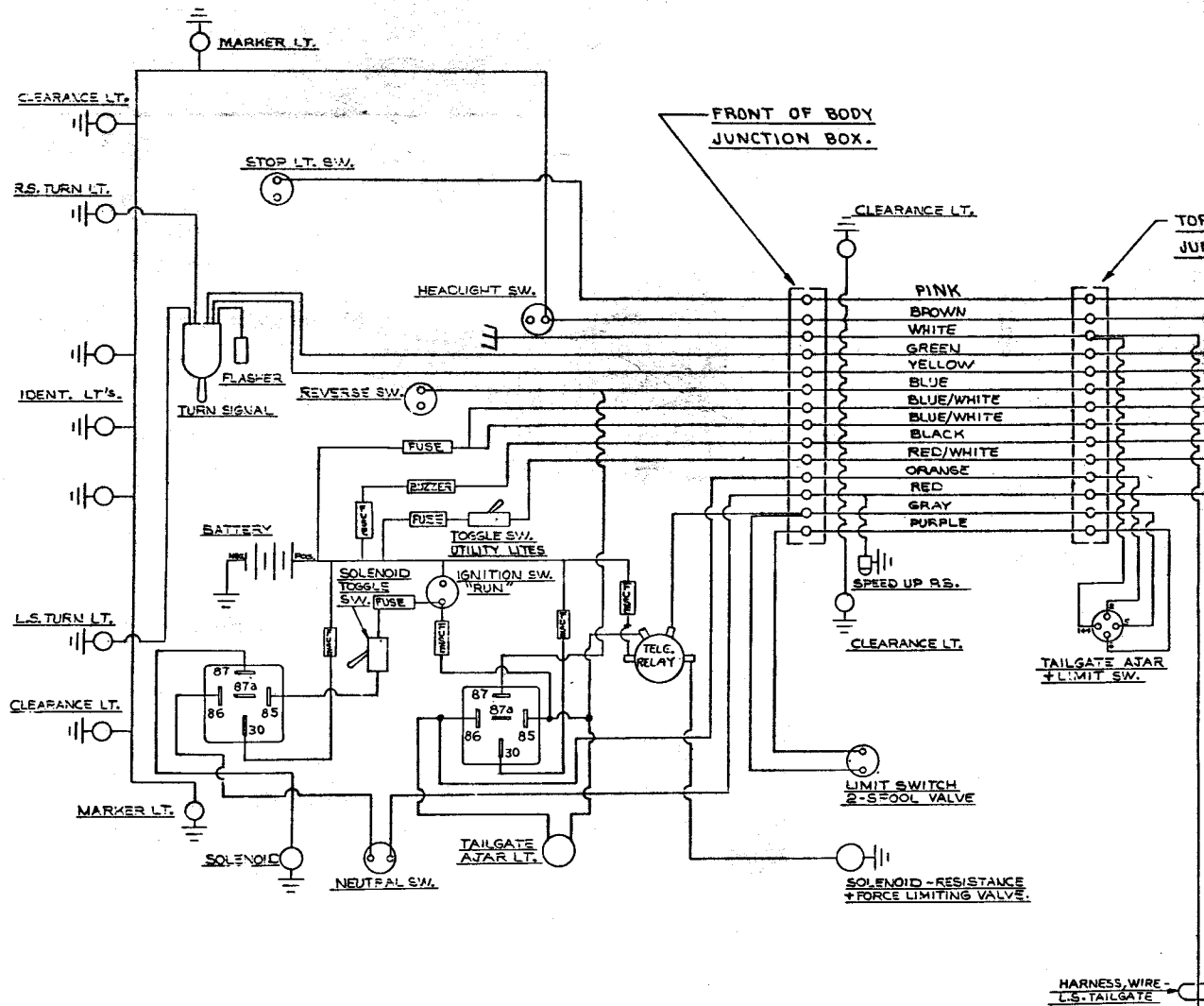
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GENERAL

The service tools shown in this section will be required for some service and repair procedures. These tools are available from your local authorized LEACH distributor.

The actual use of each tool is described in Sec. 9, SERVICE AND REPAIR of the appropriate service manual.

30522 PRESSURE GAUGE

Used to measure system pressure.

T-SK-793-100 PIN PULLER

Used to remove pivot pins from units.

T-19516-6 KNOCKOUT SPRING TOOL

Main Operating Valve. Used to remove and install spring which is under tension.

T-B19516-4-626 PACKING TOOL

Main Operating Valve. Used to install Chevron packings.

T-B19516-4-751 PACKING TOOL

Main Operating Valve. Used to install Chevron packings.

T-14284 PLUG WRENCH

Used to disassemble check portion of valving.

T-2R-1006-2 TUBE NUT WRENCH

Used to remove and install the 1-1/2" tube nut on 2Rll operating cylinders.

T-2R-1313-2 TUBE NUT WRENCH

Used to remove and install the 2" tube nut on 2Rll operating cylinders.

T-SR-9541-20 PUMP SHAFT SEAL TOOL

For installing shaft seal on Leach manufactured hydraulic pump SR-9541.

T-SR-6021-2 U-CUP GUIDE

Used to compress u-cups and start piston rod assembly into 2R/2Rll operating and pushout cylinder weldments.

100368 SNAP ON CONNECTOR

Used for quick coupling of pressure gauge.

402325 PIVOT PULLER

Used to remove 2Rll upper carrier pivots.

T-NR-246-247-10 CUP GUIDE

Used to install holding cylinder u-cups on Standard and SaniCruisers.

T-PO-1166-10 SPANNER WRENCH

Used to remove cylinder cap on 2R pushout cylinder.

103081 O-RING KIT

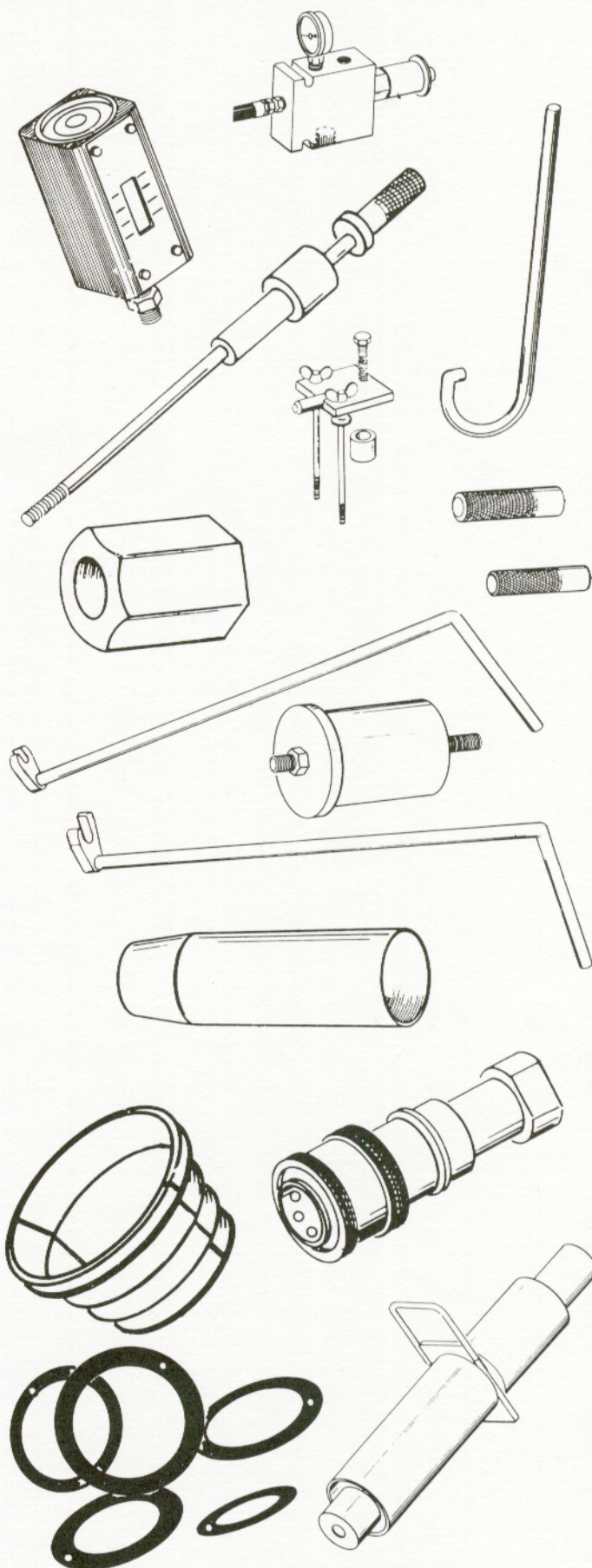
Ninety (90) special dimension various size o-rings for use on all Leach units.

T-14346 PIN PULLER

Used to remove telescopic rod end pin.

106855 TEST FIXTURE

Used to test variable resistance cartridge valve.



LEACH SERVICE ORDER FORM MANUALS AND LITERATURE

No.	Title	List Price	Quantity	Extended
Current Production Units		(each)		
105593	2Rll Parts (over S/N 9719)	\$7.00		
105606	2Rll Operator (over S/N 9719)	\$7.00		
105594	2Rll Service (over S/N 9719)	\$7.00		
105562	Beta Parts (over S/N 2140)	\$7.00		
105560	Beta Operators (over S/N 2140)	\$7.00		
105561	Beta Service (over S/N 2140)	\$7.00		
105557	Alpha Parts (over S/N 2140)	\$7.00		
105555	Alpha Operators (over S/N 2140)	\$7.00		
105556	Alpha Service (over S/N 2140)	\$7.00		
105595	FL-104 Series B Parts (over S/N 1322)	\$7.00		
105604	FL-104 Series B Operators (over S/N 1322)	\$7.00		
105596	FL-104 Series B Service (over S/N 1322)	\$7.00		
105597	Curbtender Parts	\$7.00		
105586	Curbtender Operators	\$7.00		
105587	Curbtender Service	\$7.00		
Other Publications				
105599	Rear Loader Mounting	\$7.00		
100619	Main Operating Valve Service	\$7.00		
105598	Rear Loaders Container Handling Systems (over S/N 9719)	\$7.00		
105558	Rear Loaders Container Handling Systems (0001-8993)	\$7.00		
105605	Chassis Requirements Manual	N/C		
105414	Leach three ring binder	\$7.00		
Previous Production Units				
105547	2Rll Parts (S/N 8993-9718)	\$7.00		
105549	2Rll Service (S/N 8993-9718)	\$7.00		
105567	2Rll Parts (S/N 6972-8993)	\$7.00		
105544	2Rll Service (S/N 6972-8993)	\$7.00		
105600	2Rll Parts (S/N 0001-6972)	\$7.00		
105601	2Rll Service (S/N 0001-6972)	\$7.00		
105565	Beta Parts (S/N 0001-2139)	\$7.00		
105563	Beta Service (S/N 0001-2139)	\$7.00		
102488	Beta Lubrication Wall Chart (S/N 0001-2139)	\$7.00		
102489	Beta Check Out Wall Chart (S/N 0001-2139)	\$7.00		
105566	Alpha Parts (S/N 0001-2139)	\$7.00		
105543	Alpha Operators (S/N 0001-2139)	\$7.00		
105559	Alpha Service (S/N 0001-2139)	\$7.00		
105539	Alpha Lubrication Wall Chart (S/N 0001-2139)	\$7.00		
100655	Alpha Check Out Wall Chart (S/N 0001-2139)	\$7.00		
105591	SCll Parts	\$7.00		
105536	SCll Operators	\$7.00		
105535	SCll Service	\$7.00		
105538	SCll Lubrication Wall Chart	\$7.00		
105524	SCll Check Out Wall Chart	\$7.00		
105531	SIII Parts	\$7.00		
105545	SIII Operators	\$7.00		
105581	SIII Service	\$7.00		
105533	2R Packmaster Parts	\$7.00		
105603	2R Service	\$7.00		
102526	SaniCruiser Parts	\$7.00		

See reverse for additional manuals and literature

LEACH SERVICE ORDER FORM MANUALS AND LITERATURE

No.	Title	List Price	Quantity	Extended
102531	2F Front Loader Parts	\$7.00		
100648	2F Front Loader Operators	\$7.00		
102450	2F Front Loader Service	\$7.00		
100656	2F Front Loader Lubrication Wall Chart	\$7.00		
100657	2F Front Loader Check Our Wall Chart	\$7.00		
102541	RC 17/23 Recycling Collector	\$7.00		
105382	HSD (High Side Dump) Recycling Collector	\$7.00		
105571	FL-104 Parts (S/N 0001-1321)	\$7.00		
105408	FL-104 Operators (S/N 0001-1321)	\$7.00		
105602	FL-104 Service (S/N 0001-1321)	\$7.00		
105552	FL-104 Lubrication Wall Chart (S/N 0001-1321)	\$7.00		
105551	FL-104 Check Out Wall Chart (S/N 0001-1321)	\$7.00		
	Spanish Language			
102534	Spanish 2RII Operators (S/N 0001-6972)	\$7.00		
102511	Spanish 2RII Service (S/N 0001-6972)	\$7.00		
102472	Spanish Alpha Operators (S/N 0001-2139)	\$7.00		
102541	Spanish SIII/SCII Operators	\$7.00		
105542	Spanish SCII Service	\$7.00		
	French Language			
105577	French 2RII Operators (S/N 8993-9718)	\$7.00		
105578	French 2RII Service (S/N 8993-9718)	\$7.00		
	Safety Items			
101372	Safety Vest	\$10.55		
105402	Safety Booklet	N/C		
105387	Safety Wall Posters (6 per set)	N/C		
	Videos			
102497	2RII Operators Video (S/N 0001-6972)	\$17.95		
102496	2RII Preventive Maintenance/Check Out Video (S/N 001-6972)	\$17.95		
102498	Alpha Operators Video (S/N 0001-2139)	\$17.95		
102499	Alpha Preventive Maintenance/Check Out Video (S/N 0001-2139)	\$17.95		
102513	Beta Operators Video (S/N 0001-2139)	\$17.95		
102514	Beta Preventive Maintenance/Check Out Video (S/N 0001-2139)	\$17.95		
TOTAL ENCLOSED				

Please send literature to:

NAME

BUSINESS

ADDRESS

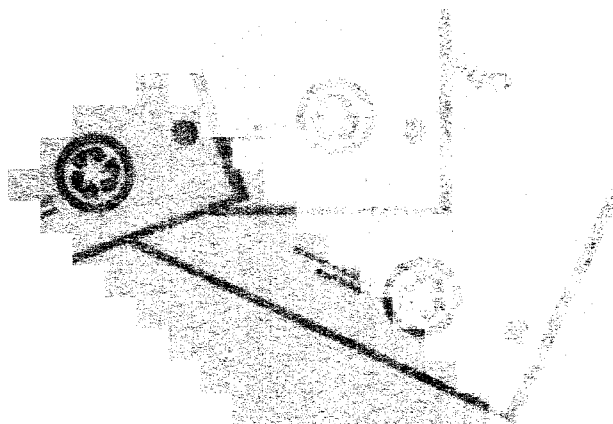
CITY, STATE, ZIP

All manuals and literature are available from your local authorized Leach distributor or directly from the Leach Company. Each manual is complete, punched and ready for insertion in any three ring binder. There is no charge for the manuals provided by your local distributor, however there is a charge for shipping and handling if forwarded by the Leach Company.

Enclose the proper amount for each item ordered and forward to:

Leach Literature Fulfillment
P.O. Box 370
Winneconne, WI 54986
Fax (414) 582-4417

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THANKS FOR YOUR HELP!

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MAILING ADDRESS

P.O. Box 530
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During Business Hours:
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TECHNICAL SUPPORT SERVICE

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Canada Parts: labriepusQC@labriegroup.com
LabriePlus Service: labrieplusservice@labriegroup.com
LabriePlus Warranty: labriepluswarranty@labriegroup.com

455 1st Avenue
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Customer Service: 1-877-452-2743

MAILING ADDRESS

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